AMERICAN
JOURNAL OF SURGERY

Vol. XXI JANUARY, 1907 No. 1

THE CHOICE OF PROCEDURE IN CASES OF LOOSE KIDNEY.*

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Too much operating has been done for loose kidney. Too little operating has been done for loose kidney. How can we blow hot and blow cold on this subject? How shall we proceed to advise our patients, and what shall be the choice of procedure in cases selected for operation?

Ten years ago when the subject of loose kidney became a prominent one, many operations were done indiscriminately, on the mere discovery that a kidney ran out of its range in any given case. A parallel history belongs to other ventures into new fields, in surgery, in mining, in banking, in law.

Many of the loose kidney patients of earlier days have to look upon their operations in an altruistic way, and to be grateful only for the opportunity which they had for furnishing negative testimony for the benefit of the profession, and incidentally for the public.

It is now the time for us to halt and look over the field with critical eye, and with judgment based upon full and ripe experience.

Herbert Spencer tells us that men judge from a standpoint of personal experience only. In my own personal experience some of the most brilliant results have been in loose kidney patients. On the other hand, there are cases that I would like to try over again just once, or to leave entirely alone. There have been fewer and fewer of the latter class, but once in a while there is one still. This must represent the experience of other surgeons who are consulted many times a year in loose kidney cases, but the points that I would make are chiefly for surgeons who are just entering the field, and who are fully equipped for everything excepting for bearing with good grace the feeling that they have done an unnecessary operation. It is hard for conscientious men to equip themselves for that. The experience is to come most often to those who can least afford it.

Loose kidney is so common that we can find it in perhaps ten per cent. of all of the women who come into the office. Are we to operate for loose kidney upon ten per cent. of all of the women who come into the office? The medical consultant thinks not.

What are we going to do about it then?

When one first goes to China all Chinese look alike to him, but after he has been there for awhile he will at least get to know the men from the women. In the same way one gets to classify loose kidney cases elaborately, and to do this well requires such a range of general medical information that the subject gets to be rather engaging. As a rule it is well to ask these patients to allow consultation with authorities upon various phases of their cases. It is better for the surgeon to assume the position of one who is to make it easier for the family physician to manage the case, rather than to promise the patient a quick and easy route out of difficulties.

The following classification of cases seems to me to be a good one for a working basis:

(1) Loose kidney present, but causing no disturbance.

Note: We must prove by clinical tests that the condition is causing no disturbance, and not depend upon the off-hand opinion that one sometimes gets from pretty good authorities.

(2) Patients with minor psychoses associated with, but not dependent upon the presence of loose kidney.

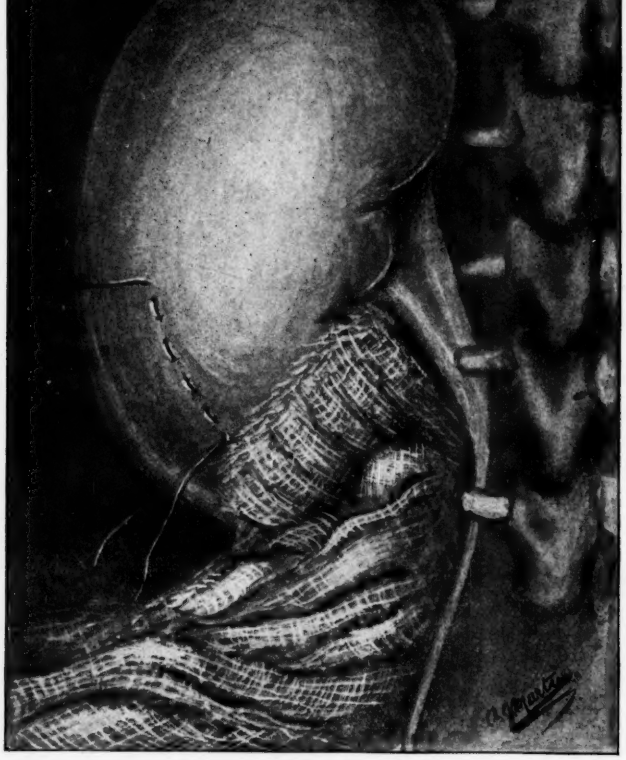
Note: These cases are traps. The patients are the ones who brought discredit upon ovarian surgery. They are the ones who drive the good pastor of the church out of religion into the real estate business.

(3) Patients with minor or major psychoses precipitated or intensified by the presence of loose kidney.

Note: Consultation between unprejudiced surgeons and unprejudiced neurologists is demanded

* Read at the meeting of the Surgical Section of the New York Academy of Medicine, December 7, 1906.

in this class of cases in order to separate the cases from those of Class 2. I have had two patients who were cured of cyclical mania by fixation of their loose kidneys. The result was not due to the effect of the operation *per se*, as sufficient time has elapsed to prove that point. Recovery was probably due to relief from the toxemia of intestinal disturbance rather than to relief from any direct or reflex cerebral impression made by the loose kidneys. In dealing with these patients it is best to state that the operation may be useless.



(4) Patients with various reflex gastro-intestinal disturbances, depending upon the influence of loose kidney through the large sympathetic ganglia.

Note: These patients are the ones who make the most brilliant response to surgical treatment. We have to rule out carefully by exclusion a number of causes which produce the same symptoms. The most commonly overlooked causes for reflex gastro-intestinal disturbance are perhaps (a) eye strain, (b) bile tract adhesions—"gall spider cases," (c) normal involution of the appendix. These causes are so common that we must at least rule them out methodically in practically every loose kidney case that comes into the office. It is particularly difficult to rule out the normal appendix involution cause, because of the reason given by Edebohls, who showed that loose kidney is often the cause for congestion of the appendix. Palpation will usually allow us to differentiate between Edebohls' appendix and mine. Edebohls' appendix is plump and persistently tender. Mine is hard, seldom plump, and not persistently tender.

(5) Patients with direct local mechanical results from the influence of loose kidney.

Note: Bright's disease, of the type described by Delafield as congestive nephritis, is common, and is probably due to torsion of the renal vein. Renal colic is caused by torsion or angulation of the ureter. Renal neuralgia is due to torsion or tension of the

sensory nerves that are involved. Cases of this fifth class give the cleanest group of cures after kidney fixation.

(6) Patients in whom loose kidney is only a part of a panptosis of the abdominal viscera.

Note: Fixation of the kidney is futile or sometimes very injurious, unless we correct the other visceral ptoses at the same time, and repair the rectus muscle diastasis. The operation is too severe to be recommended until abdominal supporters have been well tried. Some of these patients get on pretty comfortably with supporting apparatus, but others come to us finally with the statement that they prefer to have their supporters inside of the abdomen instead of outside.

What treatment shall we propose for our loose kidney cases?

Abdominal supporters first, in all of the panptosis cases.

Abdominal supporters first, in all of the cases where there is doubt about whether loose kidney is Hamlet in the play of symptoms. Some of these patients will get so much relief that they do not ask for operation. Others will improve just enough to show that we are on the right line, but that operation will do the work best. I had one male patient who had been treated for stricture of the esophagus in one city, for gastric ulcer in another city, and upon various other diagnoses in other cities. He was a man of means and could afford to employ the best talent. External support of the kidney relieved him from the effects of all his diagnoses. He gained forty pounds in weight, and took on such an amount of new kidney fat that it limited the range of the kidney, and we did not have to operate.

In cases selected for operation, which method of work is to be chosen?

I have tried all of the type methods with the exception of the new one of Longyear, who shortens the nephro-colic ligament. The point gained by that operation seems to be covered by the combination which I now employ, and which gives me a feeling of perfect comfort and satisfaction. After some years of experience, it is now a pleasure to operate for loose kidney, in the right sort of cases. The operation combines the idea of Goelet, who suspends the kidney by a kangaroo tendon suture entering the lower pole of the organ, and is carried alongside the dorsum for half the length of the kidney, then across to the other side, then down and out near the point of entrance. The two loose ends are made fast to any convenient muscular attachment. This hangs the kidney right where we want it. The next point in the combination includes the ideas of Senn and of Longyear. The lower pole of the kidney is packed with iodoformized gauze in such a way that the retroperitoneal pouch is distended. Gauze in a narrow strip is employed, and one end of the strip is left outside of the wound. The sheath of the quadratus lumborum muscle alone is sutured, and that allows good approximation of deeper structures. The skin is sutured with the exception of just enough room for the loose end of gauze. It is perhaps not necessary to state that the fatty capsule of the kidney is trimmed and that the fibrous capsule is split along the dorsum in order to give relief from the immediate inflammatory tension. At the end of a week the iodoformized gauze is removed, and no further attention is required excepting change of outer dressings for neatness. The patients are allowed to get out of bed at the end of fourteen days, as a rule.

What does this combination accomplish? The suture hangs up the kidney in a simple way. The gauze acts as a drain at first, and then causes the formation of granulation tissue, so that the secondary adhesion obliterates the retroperitoneal pouch and fixes the nephro-colic ligament.

The only instruments that I use for the operation are a pair of scissors and a needle. It is not necessary to tie any vessels. Avoidance of deep suturing obviates the danger of catching the lumbo-gluteal nerve where it would get pinched. The entire operation can be done in fifteen minutes, and I have done the double operation in that length of time without working hurriedly at any moment. Patients are in much better condition after any sort of expeditious operation than they are if we putter. My position on the subject of rapid operating has been misunderstood. My idea is simply to conserve the natural resistance of the patient. We get better results from expeditious operating, provided that no detail is neglected. The combination operation is a speedy one, and leaves no detail neglected.

BONE AND JOINT TUBERCULOSIS IN SYPHILIS.

While in hereditary syphilis tuberculosis complications are very frequent in the bones, viscera, and the cerebrospinal axis, in the acquired disease this morbid symbiosis is far less frequent, and it is less prone to complicate syphilitic joint and bone structure early in their morbid course. As the disease becomes chronic, particularly when the health of the patient is deteriorated, the tuberculosis bacillus may appear on the scene and produce a mixed and virulent complication.—R. W. TAYLOR in the *Medical Record*.

BLOOD EXAMINATION IN SURGICAL DIAGNOSIS. A PRACTICAL STUDY OF ITS SCOPE AND TECHNIC.

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Equipment Blood examinations require few instruments of precision. The essentials for hematological work are as follows:

1. *The Microscope.*—This instrument should possess a good substantial base and have a triple nose-piece. The most serviceable combination of lenses is that of a 2/3, a 1/6, and a 1/12 (the latter for oil immersion). There should be an Abbe condenser substage. Two oculars will be sufficient. A movable stage is a great convenience and time-saver, but it is not an absolute necessity. Reichert of Vienna, Zeiss of Jena, Bausch and Lomb Optical Co., of Rochester, N. Y., and others supply microscopes particularly adapted to physician's use. (See figure 1.)
2. *Hemoglobinometer:*
   Von Fleischl's or
   Tallquist's Hemoglobin-Scala or
   Hydrometer jar and urinometer.
3. *Hemocytometer.*
   Thoma-Zeiss.
4. *Glass Slides.*
5. *Coplin jar* (figure 2).
6. *Lancet.*

To Obtain Blood Specimen The specimen of blood to be examined may be obtained from any accessible portion of the body. As a matter of convenience the tip of a finger or the lobe of an ear is selected. In nervous individuals, it is of advantage to use the lobe of an ear, as they will be then less likely to interfere with the puncture and will not become excited from sight of the blood. For all practical purposes, however, the finger tip is most satisfactory as a source of blood. The skin of the finger tip is briskly rubbed with the moistened corner of a towel, and then rubbed dry with another part of the towel. Soap and water is not necessary, and alcohol is a superfluous refinement. The finger is firmly held so as to render the skin slightly tense. With a rapid rebounding stroke of the lancet a puncture is made in the pulp of the finger tip. A Hagedorn needle, spring lancet, or one-half of the nib of a new pen is used to make the puncture. The lancet should not be *pushed* through the skin. The jerky puncture occasions scarcely any pain. Children will not cry if the puncture is made rapidly; indeed a sleeping infant will not be awakened. A lack of hesitation affords the older patient no time to become nervous. The puncture made, the finger pressure is released and the blood begins to flow. Only moderate pressure should be made after the puncture, so as to avoid squeezing out so much lymph as to invalidate the accuracy of blood counting because of blood dilution. The first drop of blood is wiped off. If the blood does not flow readily with moderate pressure a second and deeper puncture is required.

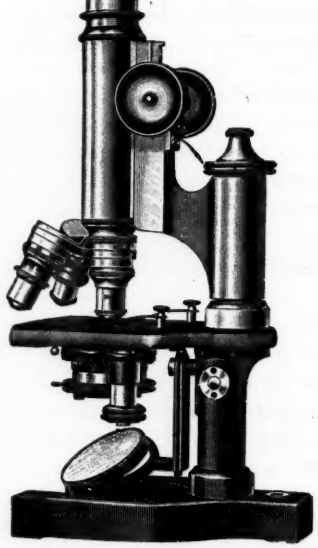

Fig. 1. A serviceable microscope (Bausch & Lomb, BB), with triple nose-piece, substage and Abbe condenser.

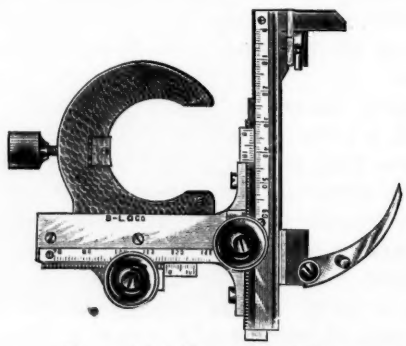

Fig. 2. Attachable mechanical stage.

Hemoglobin Estimation An approximate estimation of the hemoglobin is possible without the use of any special instrument of precision save a urinometer and its jar. The specific gravity of blood

varies directly with its hemoglobin. In many conditions, however, as leukemia with its great increase in white cells, dropsical conditions with increased plasma, diarrheal conditions with concentrated plasma, pernicious anemia with increased hemoglobin in each corpuscle, the specific gravity does not vary directly with the hemoglobin. If no special hemoglobinometer is at hand, the general rule may be followed that the specific gravity varies directly with the hemoglobin. As all hemoglobin estimations are accompanied by some error due to the personal equation, this method of estimating hemoglobin by determination of the specific gravity is of great service clinically.

Estimation of Hemoglobin by Specific Gravity.—The necessary equipment includes: A urinometer graduated from 1025 to 1060 or 1070, urinometer jar, pipette or medicine dropper, glass rod, benzol, chloroform.

After the puncture, a few drops of blood

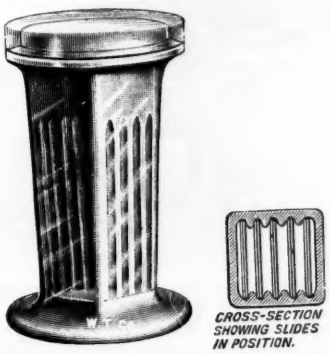

Fig. 3. Coplin jar.

are sucked up into the pipette. The urinometer jar, thoroughly cleaned and dried, is filled three-quarters full with a mixture of benzol and chloroform having a specific gravity of about 1050. A small drop of blood is wiped from the pipette. The tip of the pipette is then placed just beneath the surface of the benzol-chloroform mixture and a second drop of blood is expressed into the fluid. If the blood drop sinks in the mixture, chloroform is slowly added until, after thorough mixing by stirring with the glass rod, the blood drop neither rises nor falls. The specific gravity of the blood drop and of the mixture is then identical. If the blood drop floats to the surface of the fluid, benzol is added to reduce the specific gravity of the mixture until it is of the same density as the blood drop, whereupon the blood will remain suspended in any portion of the fluid. The mixture is then rapidly filtered and its specific gravity taken by means of a urinometer, just as the specific gravity of urine is determined. The benzol-chloroform mixture may be bottled and kept as a basis for other estimations. The following table of Hammerschlag gives the percentage of hemoglobin, according to the more exact Von Fleischl's instrument, corresponding to the specific gravity:

Specific Gravity.	*Hemoglobin Percentage.*
1033—1035	25—30
1035—1038	30—35
1038—1040	35—40
1040—1045	45—50
1045—1048	50—55
1048—1050	55—60
1050—1053	65—70
1053—1055	70—75
1055—1057	75—85
1057—1060	85—95

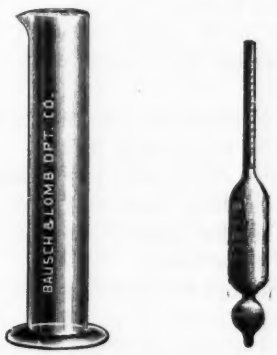

Fig. 4. Urinometer and jar.

Cautions:

Have the urinometer and jar clean and dry.

If the blood drop becomes mixed with air, filter the mixture and add thereto a second drop of blood.

If the blood sinks rapidly and adheres to the bottom of the jar, add a second drop of blood.

Be sure the chloroform and benzol are thoroughly mixed. If necessary close the mouth of the jar with the hand and invert it carefully.

If the blood drop breaks up into droplets, watch the action of the larger droplets.

If a low hemoglobin percentage is suspected start with a chloroform-benzol mixture of a specific gravity of 1040 instead of 1050.

Using a urinometer the readings are 0.004, too high, on the average.

Do not work with benzol near a flame.

Tallquist's Hemoglobin-Scala.—For bedside estimations of hemoglobin the Tallquist Hemoglobin-

Scala is the handiest, cheapest ($1.50), simplest, most rapid, and gives results with an accuracy sufficient for clinical judgment. It consists of a book of standardized filter paper and a chromo-lithograph of blood tints graduated from 10% to 100%. The color scale was secured by making water colors of the tints of blood from anemic and normal patients whose blood was absorbed by the standard filter paper. The water color served as the basis of the chromo-lithograph which is bound up in each book. To use the scale, a puncture is made and a piece of the standardized filter paper is allowed to touch the blood drop, which becomes equally distributed throughout the portion of paper absorbing it. As soon as the humid appearance is gone and before the air can act on the hemoglobin to darken it, the paper with the blood stain is moved down the color scale until a corresponding tint is found. If no exact match of color can be made, the percentage of hemoglobin lies between percentages of the tints next lighter and next darker than the blood stain on the filter paper.

The error in this method is about 10%, but this does not interfere with clinical work.

Cautions:

Make all comparisons with the scale by reflected daylight. Use no artificial light.

Have a piece of dry filter paper back of the blood stain when watching colors along the scale.

Be sure the filter paper is dry before touching it to the blood to be tested.

Various hemoglobinometers are in use, e. g. the instruments of Gower, Dare, Oliver, Sahli and von Fleischl. To describe all of them is beyond the purposes of this practical discussion. Although the Sahli instrument is at present attracting much attention, the bulk of careful work is being accomplished with the von Fleischl hemoglobinometer. For clinical purposes the modified Miescher apparatus is unnecessary.

Von Fleischl Hemoglobinometer.—The von Fleischl hemoglobinometer consists of a cylindrical cell divided into two equal semi-cylindrical compartments. One compartment is to contain the diluted hemoglobin solution. Beneath the other compartment, which is filled with distilled water, is a glass wedge of graduated color, with which the hemoglobin solution is to be compared. The color wedge is set in a metal frame arranged to run on rack and pinion beneath the compartment containing distilled water. Along one edge of the metal frame is a scale from 0 to 120, representing the percentage of hemoglobin at the corresponding point in the glass wedge. The colored wedge and the scale, needless to say, move together. A plaster of Paris reflector, below the wedge, reflects the light, preferably that of a candle flame, through the two compartments of the cell. The colored glass wedge is moved back and forth by quick turns of a milled head until the color of the hemoglobin solution in one compartment corresponds to a tint of the glass wedge as seen through the other compartment of the cell. The percentage of hemoglobin corresponding to the matched color of the glass wedge is then read.

A small capillary tube, with metal holder, accompanies the instrument. It is exactly filled with blood by touching the end of the tube to the blood drop. The blood adherent to the outside of the tube is to be quickly wiped off. Fill one compartment of the cell half full with distilled water. In this water move the filled capillary tube to and fro until the blood is washed out of it. With a medicine dropper thoroughly clean out the capillary

Fig. 5. Von Fleischl hemoglobinometer.

tube by forcing a few drops of distilled water through it into the compartment. Carefully add distilled water until the compartment is just full—with no concavity and convexity on the surface of the liquid. Cautiously stir up the blood until the hemoglobin solution is thoroughly mixed. Next fill the second compartment flush to the surface with distilled water.

Place the cell thus filled so that the compartment containing only the distilled water is directly over the wedge. Adjust the reflector so that there is equal illumination of the compartments. With the eye of the observer protected from the candle light, the wedge is moved back and forth by sudden, quick jumps until some tint in the wedge is found that exactly matches the color of the hemoglobin solution. The percentage of hemoglobin is then read off the scale. It is well to place the von Fleischl instrument in a simple box to exclude daylight while the test is made and to prevent the candle glare from reaching the observer's eye, as sketched in figure 5. For very careful work the candle should

be placed to the right or left of the instrument so that illumination of the two compartments will be exactly uniform. For ordinary clinical purposes it is satisfactory to have the candle directly in front of it. In looking through the cell one should face the source of light so as to equalize the difference of retinal sensitiveness. Readings should be made with each eye alternately, and a few seconds rest is to be allowed between the readings, for the retina tires easily to red. The colored wedge is to be moved by jerks and not gradually, for the retina notes marked changes in color depth more readily.

Cautions:

If the capillary tube is dirty, and does not fill easily tap the immersed end against the patient's finger without taking the end of the tube out of the blood drop.

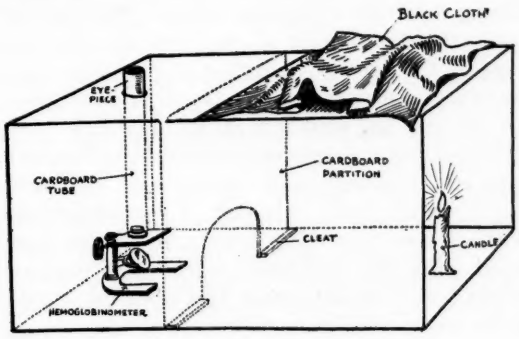

Fig. 6. Box for von Fleischl hemoglobinometer.

Fill the capillary tube exactly, allowing no concavity or convexity at either end.

If any clots appear in the hemoglobin compartment, begin again.

If the reading cannot be taken at once, cover the cell with a heavy cover glass to prevent oxidation and consequent alteration of color.

Always take two or three readings and average them.

Use the least illumination that will give distinctness, for low percentages of hemoglobin can be determined only with dim light.

A Hasty Method.—A hasty method of getting an idea of the hemoglobin percentage, which is at times valuable when no instruments are available, consists in taking a drop of the patient's blood on a clean linen handkerchief and comparing it with a drop of the surgeon's blood similarly taken up by the same handkerchief. If the surgeon knows approximately the percentage of his own hemoglobin, a fair idea of the degree of anemia present may be thus obtained.

(*To be Continued.*)

UNDESCENDED TESTICLE.

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It is my intention to discuss only such aspects of undescended testicle as may be necessary for the formulation of indications for treatment. The bulk of our profession has held, and, I think it correct to say, still holds the opinion that an undescended testicle will ultimately descend spontaneously, unless functionless, and that when it fails to descend by the time puberty is established, being without function and besides very liable to accident and malignant changes, it should be removed if any operative treatment is instituted. While many surgeons have advanced well beyond this, we might justly say, barbarous teaching, it is still too frequently practiced that undescended testicles are sacrificed either at set operations for that purpose, or in the course of operations for hernia. Indeed, many surgeons of authoritative position in the profession still lean toward orchidectomy as the solution of the problem. A search of our text-books on surgery will convince anyone of this fact. I have always believed this to be wrong, and I believe it worth our while to spend a few moments in consideration of the subject to see if we cannot offer something better than castration to this class of unfortunates.

Undescended testicle is comparatively rare, except in very young infants. It is more common, however, than such statistics as are at our command would lead us to infer. Since it is a pretty well grounded opinion in the profession that nothing can be done, in the way of treatment, except orchidectomy, under the circumstances it is natural to advise the parents to wait until puberty in expectation of voluntary descent, and then to still wait, not in expectation of anything, but simply to avoid surgery, unless some urgent surgical complication arises. Such an opinion rapidly spreads to the laity, and parents of children with undescended testicles frequently do not even consult the family physician, since they are quite capable themselves of carrying out the masterly inactivity plan of treatment. Certainly the majority of them do not have surgical advice or consultation. Men with such defects do not offer themselves for the public services, since they are usually aware that they are ineligible. For these reasons our statistics do not place the subject fairly before us.

However rare the condition it is nonetheless serious to the individual affected. Again, it is not likely that any surgeon in a lifetime of practice will fail to be consulted with regard to quite a number of cases. Therefore it behooves him to be prepared to advise them to their best interests. Few, if any, have had sufficient experience to be justified in laying down positive rules for our guidance. However, the general trend of opinion among students and observers of the condition being all one way, and the literature and reports of cases being now sufficiently ample to give us a good working basis, I think we are justified in getting away from our old ideas. Undescended testicle is very common in infants at birth, but in the great majority of cases it is corrected spontaneously during the first two or three months of life. Spontaneous descent is relatively uncommon after the first year, though it is possible at any age up to the establishment of puberty, and, in exceptional instances, even after that period. During the establishment of puberty, spontaneous descent may occur, or rather does occur, with greater frequency than in any period of the same length after the first year. After the establishment of puberty, non-descent may be considered permanent unless submitted to operative interference, spontaneous descent thereafter being too infrequent to be considered. While late descent, that is, from the second to the fourteenth year, occurs sufficiently often to give a faint coloring of justification to the hopeful delay usually inaugurated in the way of treatment, we know that in the majority of cases it does not occur. This being true, we should find out what will be the effect of non-descent on the testicles and upon the patient while we are waiting on nature.

In undescended testicle, the organ may be arrested at any point in the route taken in normal descent; that is, within the abdomen, in the inguinal canal, just beyond the superficial inguinal ring, or in the extreme upper part of the scrotum. There is no definite relationship between the histological and the physiological changes in the undescended testicle and its position. Though it is likely that the lower the position of the organ, the nearer it approaches the normal in these respects, this is not constant enough to be counted on for practical purposes. At times, in the undescended testicle, no matter at what point it is arrested, the fetal structure persists. Again, degenerative changes, especially of a fibroid character, occur, but it is likely that in most cases during childhood the organ is little different from the normally placed organ of that age. The so-called interstitial cells, which are not found in the normal adult testicle, but are very numerous in that of childhood, occur rarely in the undescended testicle of childhood, but are invariably present in specimens taken from the adult. The connection between these cells and the internal secretion of the testicle is still a mere matter of theory, and has no practical bearing on the subject. At puberty the majority of undescended testicles do not assume the function of spermatogenesis, and when the function is established it undoubtedly disappears quite early, rarely, if ever, being present beyond the age of thirty years. However, the function of spermatogenesis is not necessary for the establishment of the physiological characteristics of the normal adult male, these characteristics being undoubtedly possessed by many double cryptorchids whose testicles form no spermatozoa. It seems likely that most undescended testicles that progress during childhood beyond the infantile type continue to develop functionally in every respect, except as regards the function of formation of spermatozoa, though of course they are more subject to degenerate changes, and senility is earlier in its onset. We find then that the undescended testicle, in the adult, may fail altogether in the functions of that organ, but it usually lacks only that of spermatogenesis, which it loses soon after puberty, if it is developed at all. The other functions are most likely less well marked, and are lost earlier than when the gland is in its proper position.

Naturally, these patients make a fair mark for sexual neurasthenia, and it must at times be very difficult to differentiate this condition from real debility. The undescended testicle, unless within the abdominal cavity, is more exposed to injury than the normal organ. It is immobile and occupies a position that makes it readily accessible to violence. In addition to external violence when within the inguinal canal, it is liable to injurious pressure from sudden and violent contraction of the abdominal muscles. Gonorrhea, tuberculosis, and syphilis, for these reasons are more likely to attack the undescended testicle, or its epididymis. Torsion of the cord is much more common, proportionately, in this condition than when the organ is in its normal habitat, in fact over half the cases occur in undescended testicles. Malignant disease, especially sarcoma, is also more common, but not to the extent that we were once led to believe. Trauma, no doubt, cuts some figure here as in sarcoma generally, consequently this trouble is less apt to attack the testicle when it is retained in the abdomen, than when it is lower down, even in its normal position, possibly.

By far the most important complication of un-

descended testicle is inguinal hernia. Over one-half the cases have actual hernia as a complication, while practically all the others have potential hernia in that there is present an open pouch of peritoneum (a processus vaginalis instead of a tunica vaginalis). This process of peritoneum precedes the testicle in its normal descent, and though we cannot say that a peritoneal pouch is always formed in anticipation of the descent of the testicle in those cases in which descent fails to occur, it is a fact that it is almost invariably present, and it is also true that on account of the disturbance of nature's usual routine, this sac is not obliterated, even at the neck. The exceptions to this are too few to be worth considering in determining the likelihood of hernia occurring as a complication. It is also true that these herniæ, being quite frequently of the interstitial type, and further complicated in most cases by the presence of the testicle in the canal, or possibly in one of the rings, are more liable to accident than the average inguinal hernia. Further, it is not possible to treat or palliate these herniæ, with few exceptions, by the wearing of a truss, since pressure on the testicle would cause intolerable pain, as well as do further damage to a none too vigorous organ. Another point of some value is that spontaneous descent, occurring after the first year, does not relieve the coexisting hernia, nor does it much diminish the probability of its occurrence in those cases in which it is not already present.

We may summarize up to this point as follows: First, an undescended testicle differs little in childhood from the normal, except in location. Second, it fails at puberty to develop the faculty of spermatogenesis, but is otherwise functionally active, though it will not probably be so long lived, so to speak. Third, it is at all times somewhat more liable to trauma, inflammation, malignant changes, and other accidents. Fourth, it is complicated by actual or potential hernia.

These conclusions are accepted as fitting all but a small per cent. of cases, by all investigators, except with regard to the first and second. Here some authoritative voices insist that the organ is functionless and dangerous at all times. There is too much evidence to the contrary for us to accept this opinion, however, and we can safely take the summary just given as a working basis.

There is just one more point to consider before we take up the subject of treatment. Undescended testicle is in the majority of cases unilateral, being more common on the right side than on the left. It is a well-known fact that a man with a single testicle, normal in every respect, is just as complete from a sexual standpoint, as if he had his full complement, except in so far as the knowledge that he is not anatomically perfect may have a tendency, if he be a nervous individual, to produce sexual neurasthenia. This fact places the monocryptorchid on a somewhat different basis from his more unfortunate brother, the double cryptorchid.

We have now gotten to the point where we may take up and investigate the results of treatment.

There is no treatment worthy of the name except the operative. This consists in placing the undescended testicle in the proper position in the scrotum (orchidopexy), replacing it within the abdomen, or removing it (orchidectomy). Of these we shall consider orchidopexy first, as it will at once appeal to us as a rational procedure, if experience proves it to be feasible. In the great majority of cases the testicle can be brought down and placed within the scrotum, and reasonably low, though it may be necessary to subject it to considerable violence, and even to cut the spermatic artery and pampiniform plexus of veins, and dissect the epididymis from the testicle. Further, testicles properly freed and placed within the scrotum up to and during the age of puberty will, as a rule, develop along normal lines, though it is doubtful if they often attain full size. On the other hand they at times fail to improve and may even atrophy. Naturally, the more traumatism the organ has been subjected to, and the more its blood supply has been interfered with, the more apt it is to stand still or go backward. My own experience leads me to believe that obstruction to the venous return alone is just as dangerous as, if not more so than, ligation of the artery and its accompanying veins. There is no absolute regularity in the behavior of the testicle after orchidopexy, for some glands that apparently have every reason to go on and develop, actually go backward, while some behave in the most satisfactory manner after being most outrageously mauled. This much is certain, however, that the undescended testicle properly placed in the scrotum at any age up to fifteen years will usually develop in a satisfactory manner. After that period we have less and less hope of improvement in size and function from operation, as age advances.

Replacement within the abdomen protects the testicle from trauma and disease, and while it is not likely that much, if any, improvement in the actual condition of the organ occurs, certainly no ill effects follow this replacement. A testicle placed within the abdomen may cause serious trouble by becoming inflamed or otherwise diseased, but such accidents are undoubtedly not even as common as in

the normally placed organ. We must remember here that the testicle is outside of the peritoneum, and in case of infection, with proper care, the danger of peritonitis is very slight.

As to orchidectomy, I have already stated that it is a very common belief that this is the only treatment, but you will at once agree that it could only be justified from the standpoint of the interest of the testicle itself in the case of a functionless organ, a diseased organ, or because of very pronounced predisposition to disease. In the absence of these, its only advantage is in simplifying operation on the complicating hernia, a purpose just as well subserved by abdominal replacement.

Allow me to repeat some of my statements in order to get the matter in compact form up to this point:

First. The spontaneous descent of an undescended testicle is relatively uncommon after the first year in life.

Second. Unless placed in the scrotum by some agency before the establishment of puberty, the testicle is functionally imperfect, and such function as it possesses is lost prematurely.

Third. In the monocryptorchid the preservation of the function of the undescended testicle is important, because of the possibility of accident to the normal testicle. Then, too, the absence of even one testicle from its normal position predisposes to sexual neurasthenia in nervous individuals.

Fourth. In double cryptorchids, unless the condition is relieved, sterility is certain, and in many instances the virility of the patient is impaired, and is apt to be prematurely lost entirely.

Fifth. Undescended testicle is especially liable to accident and disease, is complicated by actual or potential hernia, and a hernia, when present, cannot be supported by a truss.

Sixth. By operation before puberty the undescended testicle can nearly always be placed in its proper position with more than a reasonable hope that it will develop along normal lines. At the same operation the question of hernia can be disposed of and of course the organ can be relieved of the risk of accident, etc.

Seventh. When the testicle cannot at operation be brought down into the scrotum, replacement extraperitoneally within the abdomen will result in the preservation of such functions as it possesses, will protect it from injury and even from disease, and at the same time allow complete closure of the inguinal canal as a prophylactic against hernia.

This is not theory, it is fact, as a study of the literature or the application of modern surgical methods in even a limited series of cases will convince anyone.

Therefore, I consider it a reasonable deduction that undescended testicle is at all times a surgical condition; and that, in the absence of urgent contraindications to surgery of any character, it should always be operated on before puberty, preferably between the ages of ten and twelve years. This age is selected because it is early enough for the interest of the testicle, it gives opportunity for spontaneous descent, and we avoid the dangers and drawbacks incident to the operation on young children. Of course, individual cases may demand earlier interference for special reasons. After puberty operation is still indicated, unless the testicle is within the abdominal cavity, and there is an entire absence of evidence of hernia. As already indicated, my preference in children would be always for orchidopexy, provided it can be done; if not, abdominal replacement, unless orchidectomy is demanded by reason of injury or disease. This choice of orchidopexy is made deliberately and with the knowledge that castration will have to be done later in some cases The results are sufficiently good to justify us in taking this risk. In adults, unless the testicle is fairly well developed (something that we will not often find, but when found it is an indication for orchidopexy), abdominal replacement would be my preference, unless orchidectomy is, as before, demanded by reason of injury or disease, or justified by the patient's age. It is practically impossible to tell at operation that an organ is functionless, and orchidectomy has not even the advantage over abdominal replacement of simplifying the operation.

It is not my intention to take up the technic of orchidopexy, though there are points about it, the careful observance of which is very essential to its successful practice, and much unfavorable opinion has doubtless been based on a failure to observe them. I have found very satisfactory the technic described by Dr. A. D. Bevan in the *Journal of the American Medical Association*, September 23, 1899, and September 19, 1903. The complete separation of the processus vaginalis from the cord, and its division, is an important part of the technic. The separation of the posterior parietal peritoneum from the spermatic vessels as they pass upward from the internal ring is another. All fascial bands in the cord must be divided, or, as Bevan suggests, torn across with forceps. His contention that the processus vaginalis is the main obstacle in most cases to bringing and keeping the testicle down, I believe to be correct. I have never had a case of abdominal retention, and have never found it necessary to

divide the spermatic vessel, which after the vaginal process has been disposed of may be found too short to allow the testicle to be brought down, though I would not hesitate to do so in order to get the testicle into the scrotum. The sacrifice of these structures in operating for varicocele proves that they are not essential to the integrity of the testicle. However, atrophy will necessarily follow this procedure at times here, just as in the Bennett operation. I wish to again urge care in closing the muscles around the cord, for I believe venous stasis is dangerous, in spite of the contention of some that a certain amount is desirable. This is undoubtedly true, but the exact amount that is beneficial is difficult, not to say impossible, to obtain. I have had one case of atrophy of an apparently normal testicle that I could not account for on any other grounds.

I do not believe there is any advantage in suturing the testicle to the thigh, after Keetley and others. I do not see how a patient can tolerate the procedure where there is any tension, nor do I believe it will prevent retraction where there is a tendency to this, unless it is kept permanently fastened. It is not necessary even if it is effectual, if the cord has been properly treated.

The cord will stand considerable traction in the effort to bring the testicle down, except in young children in whom the vas is readily torn. The method of closure used on the muscles of the belly wall is a matter of personal preference. Once the testicle is brought down, the conditions are those ordinarily met in hernia, and any of the ordinary methods may be employed, though I think Ferguson's method takes up less of the length of the cord.

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LOCAL ANESTHESIA IN RECTAL WORK—ITS HISTORY AND ITS INDICATIONS.

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Much has been said on the subject of local anesthesia; but, from its importance, both to the surgeon and the patient, some further testimony on the subject may not be out of place.

While local anesthesia cannot be termed new, it is only within a few years that it has been extensively employed.

In 1902, Dr. Reclus of Paris, first suggested and performed the operation for dilatation of the sphincter, by injecting a strong solution of cocain into various parts of the sphincter muscle; but with only indifferent success. Dr. John A. Bodine of New York then adopted this method, using, however, a very weak, instead of a strong solution, faring no better, however, than Reclus. Dr. Martin of Washington followed. To quote from his report: "In patients affected with the more aggravated states of prolapse, the sphincters should be anesthetized (0.1% eucain solution) at several points in their circumference." (Martin-Hemmeter, Vol. 2, p. 645). * * * "Hypodermatic injections of about ten minims of 0.1% solution of cocain into the rectal and ental sphincters to secure their painless dilatation are sometimes necessary." (Martin-Hemmeter, Vol. 2, p. 650).

On January 10, 1904, Dr. James P. Tuttle of New York first demonstrated the possibility of painless dilatation of the sphincter with a single puncture and a ½% solution of cocain. In February of the same year, he demonstrated to the satisfaction of Dr. Alexander Lambert the absolute certainty of this method, and then demonstrated it to the class at the Polyclinic and to visiting physicians of this and other states.

At a meeting of the Proctological Society in 1905, in a private communication, Dr. Tuttle gave the members of that Society the history of these demonstrations, as follows: "In order that the members of this Society may have the advantage of trying these methods without waiting for publication, I wish here to make a preliminary and confidential communication to you of the technic used for dilatation of the sphincter by local anesthesia with one single puncture of the skin. A hypodermatic needle about two inches in length is employed; a sterile solution of ½% cocain or eucain is used. I prefer cocain freshly made because it is always

reliable; the needle is introduced in the median line about one-half inch back of the posterior commissure of the anus; a drop or two of the solution is injected into the subcutaneous tissue; the right index finger is then introduced into the rectum and hooked around the internal sphincter, thus dragging it down into apposition with the external; the needle is then carried upward and forward into the sphincters, one after the other, depositing about five minims of the solution in each muscle at a point about one-half inch in front of the posterior commissure; the needle is then easily withdrawn and introduced in a like manner into the muscle on the opposite

Fig. 1. Finger dragging down sphincters. Needle introduced in proper line. External sphincter shown in dotted lines.

side of the posterior commissure; twenty or thirty minims of the solution are used. After about two or three minutes a duck bill speculum is introduced into the anterior commissure of the rectum and with this as point of resistance the sphincters are gently massaged and stretched to any desirable extent.

"I do not claim, by this method, that the sphincter can be divulsed or the perirectal tissues torn down without pain; but I do claim that the sphincters can be stretched sufficiently for all practical purposes under local anesthesia. Over one hundred cases have been operated on by my associate, Dr. Lynch, and myself, up to this writing, with practically no failures, and the method has been demonstrated to a large number of visiting doctors during the past six months at the Polyclinic Hospital. The points for which I claim originality are the single puncture, thus minimizing the danger of infection, and the localization of the sensitive nerves of the sphincter."

In 1905 Dr. Pennington of Chicago printed a report of cases operated on by this method (but without giving Tuttle credit).

In adopting local anesthesia, many will have met with disappointment from faith in the too roseate view of some authors, and others may have been discouraged from the pessimistic reports of those who have not had the happiest of results. Between the two lies the truth.

First of all, let me say, that what the surgeon terms "painless," and what the patient terms painless, are not always identical! Practically painless is perhaps more accurate. But however slight the

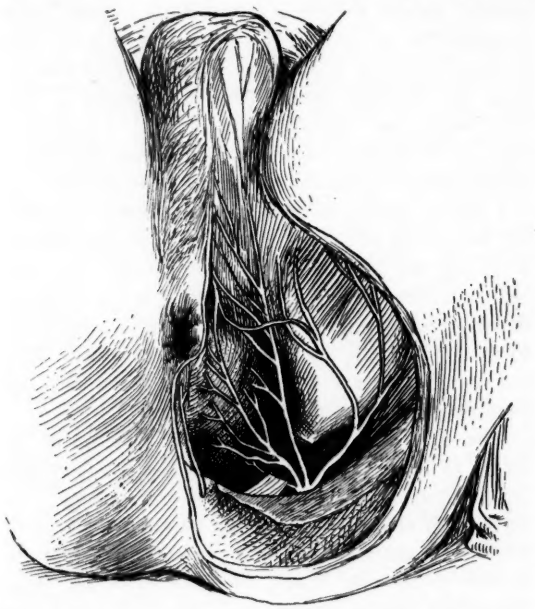

Fig. 2. Distribution of inferior hemorrhoidal and lesser sphincterian nerves. (Reproduced from a drawing in the possession of Dr. James Tuttle.)

discomfort during the operation, post-operative pain, in rectal surgery, is unavoidable, whatever the anesthetic employed, unless prevented by opium or some other anodyne.

There is no doubt that in many cases local anesthesia is a godsend. The patient who, because of his condition or through apprehension, cannot take a general anesthetic, is delighted with it. But there are other cases where the result is most unsatisfactory and painful.

In the first place, the character of the operation must be considered. Secondly must be considered the patient's temperament, i. e., whether he is phlegmatic or nervous, and whether or not he is mentally equipped to bear *repair* while conscious. With a person who is moderately calm and courageous, I find these operations entirely feasible under local anesthesia: Dilatation; Operation for Fissure; for External, Internal, and Thrombotic Hemorrhoids; for Polypi; and for certain types of Fistulæ.

Dilatation can be performed with less pain than discomfort, if Tuttle's technic is followed. The important point to remember is that the sensitive nerves are the inferior hemorrhoidal and the lesser sphincterial. The inferior hemorrhoidal is sometimes derived from the pudic, from beneath the sacrosciatic ligament. However, it is often derived from the sacral plexus direct. It enters the sphincter in the shape of a fan. It is not spread out, as is sometimes supposed, but enters the muscle in the long axis of the anus.

There is hardly a case of fissure that cannot be operated upon with satisfaction; the patient being relieved with a minimum of pain and detention.

On the other hand, fistulæ, except those that are of the straight, submucous type, and those opening anteriorly—which are generally free from complications—are not amenable to local anesthesia.

The writer, who has operated on fistulæ of every type, after several unsatisfactory experiences with local anesthesia in this field, unhestitatingly commends, for this class of operation, the general anesthetic, except for the types noted above.

External hemorrhoids, skin tabs, and similar conditions, can be satisfactorily operated upon with injections of either sterile water, or very weak cocain solution; but these are the only conditions under which sterile water anesthesia may be properly employed. In these cases it is possible, because in loose tissue pressure on the nerve ends is lost.

I have used sterile water, magnesium sulphate, salt solution, B eucain, and stovain, and have given each a fair and impartial trial, both in hospital work and private practice, and I am convinced that in cocain we have the only safe and reliable anesthetic. There is no question in my mind, or in the mind of Tuttle, Bodine, and other surgeons who use local anesthesia extensively, that cocain in the proportion of 1/5 to 1/10 of one per cent., as we use it in our work, is superior to all other local anesthetics.

I have had no luck to boast of with sterile water. No matter how carefully it was injected, the patient invariably suffered much pain. Even when it was injected drop by drop the result was very painful. It is not isotonic with the interstitial fluids of the body, and is therefore irritating.

Thrombotic hemorrhoids are particularly amenable to a local anesthetic. They can be incised, and the clot, or clots, turned out without undue pain. If there is a redundancy of skin, however, I find it better to excise a hemorrhoid, as the inflammatory edema following may otherwise cause more discomfort than the original condition.

Internal hemorrhoids can be removed with very little inconvenience to the patient, except when they are very small and do not prolapse, and the patient has a funnel-shaped anus. In such cases it is difficult to operate under local anesthesia, and here I prefer to use ethyl chlorid, or ethyl chlorid and chloroform. I have used these anesthetics over two hundred times, and consider them, next to cocain, the most valuable for short operations.

Sometimes we are at a loss to account for the recurrence of internal hemorrhoids shortly after they have been removed under local anesthesia; but the explanation is that too much of the solution was used, and the hemorrhoidal veins were left. How does this happen? In the first place, a quantity of the solution sufficient to cause considerable distension of the hemorrhoid is injected beneath the mucous membrane; as a consequence, the mucous membrane and veins are separated, and when we come to remove what appears to be hemorrhoidal tissue, we remove only mucous membrane. To obviate this, inject the solution slowly, and only a little at a time. We must remember that it takes a little time for the cocain to act. Inject as little of the solution as is consistent with painless removal.

Polypi, if in the sensitive area, can be treated in the same manner as hemorrhoids; if beyond this zone, no anesthetic is necessary. Six polypi were removed from a boy of seven, by the writer, at one sitting, the patient suffering no pain, except from the introduction of the proctoscope, which is always disagreeable when first employed.

I have burned rectal strictures of the valvular type with my new instrument, the thyrotome, before the class at the Polyclinic, and the patient experienced no pain. This I mention as proof that above the area mentioned local anesthesia is not required. I have also done the Whitehead operation under cocain; but I do not advocate local anesthesia for so extensive an operation.

Some authorities advise extirpation of epithelioliomata and carcinomata that are low down, under local anesthesia; but at this I draw the line. I believe with Tuttle, Kelsey, Earle, and other conservative surgeons, that such conditions, no matter how circumscribed, require radical measures, and therefore belong to the domain of general anesthesia.

I appreciate that the advocacy of any particular operation is not within the scope of this paper; but I cannot refrain from a few words on my experience with the clamp and cautery. During the last three years I have operated upon over a hundred and fifty cases of hemorrhoids. In the earlier part of this period I used the ligature, thinking it the best method. But experience (and severe hemor-

rhages) have taught me that I can never be certain of results, by this process, and I have now returned to the old time operation with the clamp and cautery. I have used this method in the last twenty cases, with gratifying results.

I have given here what I consider a conservative view of local anesthesia. With two large clinics and my private practice to draw upon, I have tested it extensively, and feel I can speak authoritatively as to its place in rectal work.

Men who promise—and try—to operate on any and all rectal conditions under local anesthesia, are either inexperienced, or indifferent as to results.

To the man who selects cases intelligently, however, local anesthesia will prove a valuable aid.

36 WEST 35TH STREET.

THE TREATMENT OF LATERAL CURVATURE.*

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The basic principle upon which we generally work in overcoming deformity, viz., active correction and passive retention in the corrected position, is here beset with difficulties on account of the complicated construction and manifold functions of the spinal column. Retention in the corrected attitude —by means of apparatus—without practical immobilization, is impossible; and thus we lose the adjuvant of motion as a further corrective factor. Again, the correction itself is quite difficult owing to the fact that we cannot apply our forces directly upon the twisted, frequently deformed vertebræ, but must endeavor to bring about the curative effect by increasing the local and general muscular power, by reducing the harmful influence of the continually active superincumbent weight of the head and shoulders, through stretching and the assumption of the recumbent position, and by applying our corrective apparatus to the parts in close proximity to the deviation. From this it is apparent that the earlier we recognize and systematically treat lateral curvature, the more hopeful may our prognosis be. Unhappily our aid is usually not invoked until real, bony deformity, rotation and fixation have set in—the old notion, "the child will outgrow it," being still too firmly fixed in the general mind. In now rapidly outlining the treatment, I shall describe the various methods collectively for all cases; as each individual case demands, so it receives, a certain share and kind.

* Read before the Harlem Medical Association, November 7, 1906.

1. VOLUNTARY ACTIVE CORRECTION.

It is our aim to actively engage the musculature of the entire body, but especially that of the back, hips and shoulders, by means of graded exercises, thus developing the muscles generally, equalizing their relative activity and improving the general health. The patient is dressed as lightly as possible—an apron, leaving the arms and back free for observation, bloomers, stockings and light canvas shoes making up the suit. Our first step is to place the child in the correct standing position and then rigidly to enforce its maintenance during the active exercises that follow. I also after each fifth or sixth exercise command the children to take several deep breaths, inhaling and exhaling to slow count. We employ:

(1) *Free Exercises without Dumb-bells,* of the head, trunk and legs.

(2) *Dumb-bell Exercises.* The dumb-bell I use varies from one-half to two pounds in weight, according to the age and strength of the child. I do not believe in trying to add muscle power by rapidly increasing the weight of the dumb-bells; this too easily leads to undue fatigue with resultant harm. Sometimes also I replace the bells with light wands or Indian clubs, the exercises being in most part the same.

(3) *Floor Exercises;* lying on the back or flat on the stomach, either resisted or unresisted.

(4) *Heavy Dumb-bell Pushing;* with either one or both hands to full extension above the head.

(5) Added to these *Manual Suspension from Rings and Horizontal Bar,* with or without the toes touching the floor.

All these exercises tend to improve the strength of the patient, to give him a lasting idea of the best possible position and, as far as it is possible, to increase the mobility and flexibility of the spinal column itself. In practically all cases—excepting the very young, the rhachitic, paralytic and those where the deformity is caused by morbid processes—this active, voluntary method of treatment is demanded solely or at one time or another, i. e., before or after passive correction and retention have been endeavored.

2. MECHANICAL APPARATUS CORRECTION.

This is begun immediately after the active exercises have ceased, with the intention primarily of resting the now well tired muscles before any faulty attitude can be resumed, and secondly, to still further reduce the deformity while the spine is most pliable. At first the child is placed upon

The Lorenz Inclined Plane. The apparatus is

simple. It consists of a board about six feet long by two broad, and tilted at an angle of forty-five degrees. At its upper end are steel hooks, to which the head gear is attached, and a large opening at such distance below them that the child's head hangs freely suspended in it. The head gear being fastened, the child is now laid upon its back on the board and securely hooked. It lies thus for from fifteen to thirty minutes, suspended only from the head, the arms hanging down at its sides, the legs close together and in a straight line with the center of the body. In this way the weight of the body gradually extends and straightens the spine, the flat board furthermore pressing against and overcoming concomitant irregularities. Corrective efficiency may be increased by placing sand bags under the point of greatest deformity.

Should there be any signs of stiffness in the spinal column, so as to prevent voluntary or moderate passive rectification, I always employ one or both of the following apparatus after the period on the inclined plane:

The Lorenz Wolm: A well-padded drum is so fastened between uprights that it can be raised or lowered as the size of the child demands. It can be used in two ways: either the operator stands behind, grasps the patient, who stands with his back against the drum, under the armpits and draws him over it, bringing the point of greatest deformity immediately over the drum and then gently molding it, or the child itself bends back over the wolm as far as possible, remaining in this position as long as it can.

The Hoffa Sitz Rahmen: The child sits upon a sliding seat in the large frame, the feet just touching the floor. The thighs and pelvis are securely strapped down, the shoulders held firmly back by straps. The headgear is fastened and hooked to the yoke, the hand of the concave side securely grasping the latter. By means of rope and pulley we now draw up on the head, extending the spine to its fullest range. Over the protruding ribs a well-cushioned steel pad, with side arms and hooks, is placed, and through another set of rope and pulleys, drawn forcibly against them until the convexity has been reduced. In this position it is fastened, and the patient remains thus for from five to ten minutes. As the stiffness decreases the corrective power is increased, and the time lengthened.

Lorenz Wolm. Inclined Plane.

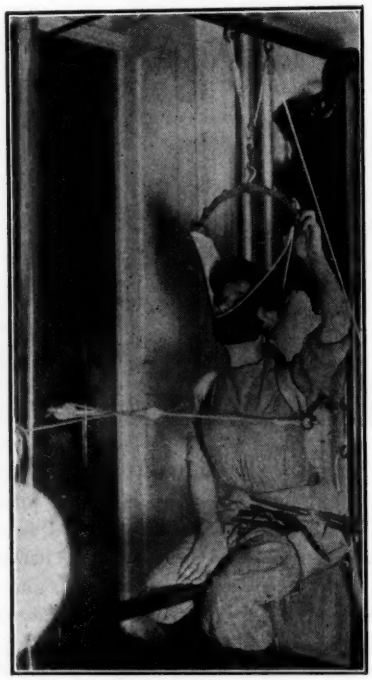
3. MASSAGE.

The patient lies face downward on the bench, the body flat, arms hanging down loosely, all muscles relaxed. The different groups of back muscles on both sides are thoroughly and evenly manipulated. The procedures followed are stroking, two-hand kneading and stroking of each individual muscle group; finally finger-tip striking of the entire back to cause manifold, quick contractions of the muscle fibers. The effect of massage is threefold: First, it accelerates the general circulation, thus aiding increased tissue change—with a markedly beneficial effect on the health of the child; secondly, during the procedure the deformity itself is more or less reduced; and, thirdly, it strengthens all the muscles, acting directly upon the spinal column, making the voluntary corrective effort more pro-

nounced and its maintenance increasingly assured. I do not believe in unilateral manipulation. Added to this massage are usually a few active exercises, such as trunk raising backward, and bending from side to side while the feet are held, etc.

4. PASSIVE CORRECTION.

This can be done either with or without an anesthetic, the fundamental principle being to correct the deformity as far as is possible and apply a plaster of Paris jacket while the patient is in this corrected attitude. This jacket is allowed to remain applied for from three to six weeks, is then removed, more



Hoffa Sitz Rahmen.

correction of the deformity undertaken, another one put on, etc. From simple suspension up to Calot's redressement forcé, various devices—mechanical and otherwise—have been perfected to bring the deformed spine to a good position while the jacket is being applied—none as yet fully satisfactory, after the curvature has become fixed. The jacket itself is generally applied to the trunk alone, extending from the armpits to, and including, the upper half of the pelvis. It should be as light as is feasible, well molded and snug, without causing undue pressure at any one point, and all bony projections should be carefully padded. Some authors add the jury-mast, some include the head and shoulders, and some, in addition to these, one of the thighs in severe cases.

I have read of cases where several of the protruding ribs have been resected posteriorly as an aid to correction, apparently with good cosmetic effect, but with what ultimate result remains to be seen.

5. RETENTION IN APPARATUS.

This as an adjuvant to active correction is undoubtedly often demanded. I do not believe that it should be continuously enforced, nor our sole method of treatment, on account of too easily causing general weakness and muscular atrophy. For the sake of brevity I shall categorize the use of retentive apparatus under two headings:

(1) *The Ambulatory Splint.* To be applied and worn while the patient is in the erect posture. The splint should be light, rest snugly and firmly upon its base of support, and be so shaped as to hold the erect trunk in the best possible position. Cumbersome springs or unsanitary and irksome elastic bands only add to the weight, not to the efficiency.

We employ:

Braces, of which I will name the modified Hessing, the Knight spinal and the Taylor brace.

Corsets, made of plaster of Paris, aluminum, papier maché or celluloid.

(2) *The Recumbent Splint:*

The *Bradford frame,* usually our treatment of preference in the very young and rhachitic, is frequently combined with head and foot extension. Its advantage over bed treatment is that the child, although continuously recumbent on its back and thereby straightened, can be carried about and out into the fresh air.

The *"Gyps Bett,"* a plaster of Paris shell enclosing the posterior aspect of the trunk. It is applied the same as a jacket, while the child is in full extension. It is then lined and padded, after all irregularities have been hammered out, and straps are attached to hold down the pelvis and shoulders. The child is to lie in it for at least a part of, if not the entire night—its corrective influence is thus active for a good part of the twenty-four hours.

6. GENERAL REMARKS AND HOME TREATMENT.

That our attention should be directed upon the elimination of all harmful influences at home is of utmost importance. Corrective treatment in the clinic or office for the few hours in the week is otherwise insufficient.

Our rules must therefore apply to:

School Hours. If possible, these should be shortened and the studies lightened. The parents are in mortal fear that their child is dropping behind in its studies; it must be our purpose to instruct them that the bodily deformity is far more

pernicious than this lack of knowledge, and that the weak constitution needs far more attention than the but passing dulness. Furthermore, the carrying of books or bundles must be prohibited, and its harmful effect explained.

Concomitant Disorders, such as rickets, anemia, eye-strain, adenoids or weak-foot, should be corrected. Concerning these I do *not* say that their correction alone will cure lateral curvature. But had this been done earlier in many cases it would have prevented it undoubtedly; and even after the curvature has formed, the removal of these influences is an important adjuvant in the treatment.

Bradford Frame.

Careful medical supervision of the growing child is imperative.

Sleep should be long, and high pillows, heavy bed-clothes and soft mattresses should be eliminated. The child should, if possible, sleep alone, watched in its sleeping attitude, and should be reminded to lie as much as possible flat on its back.

Rest. Every child should for at least an hour daily assume the recumbent attitude, especially so when arriving home from the exercise treatment. To make the effect of this still more marked I advise the use of the inclined plane at home wherever feasible.

High Shoe. Where one hip is found to be lower than the other it is indicated to build up the shoe of that side, so as to bring them to an equal height. In thus raising the pelvis to a horizontal plane we bring about a secondary beneficial influence on the deflected spine.

Exercises should be simple. Complicated movements are usually promptly distorted in the parents' minds and more harm than good results from their faulty execution. I usually limit home exercises to deep breathing at the open window, the assumption of the correct attitude before a looking-glass, and hanging by the hands from some convenient door jam until tired; all these twice daily.

In conclusion, I wish briefly to emphasize:

First, that the aim of all physicians and parents should be directed toward rearing the growing child in as healthy surroundings as possible. Smaller errors corrected prevent greater deformity. Our battle against lateral curvature is one primarily against rickets and always for the health and strength of the growing child.

Second, that the earlier the deformity is recognized and corrected the more gratifying the results of treatment are.

Third, that forcible correction and retention alone is insufficient, no matter which grade of deformity is present. When the jacket is removed the patient has to again learn the active, erect carriage of the trunk.

Fourth, braces or corsets as an adjuvant to active correction are frequently demanded, but as the sole form of treatment they do more harm than good.

Fifth, the length of time necessary for treatment depends entirely upon the severity of the case and the general condition of the child. For the average non-spastic, structural lateral curvature, about five months of active exercises, taken at least three times a week, are indicated.

Sixth, correction by exercise, combined with massage and active mechanical correction, calling forth, as it does, the energy and interest of the sufferer, once secured, puts the patient into condition to be capable of remaining always in this good attitude.

158 WEST 118TH STREET.

"NEURALGIA OF THE STOMACH" AND GALL-BLADDER TROUBLE.

With respect to gall-bladder disease, the opinion is that were neuralgias, gastralgias, cardialgias, forever buried, there would be more accurate diagnoses, as these rarely occur as entities, but usually as the result of some stomach or biliary lesion. More than ninety per cent. of the so-called neuralgias of the stomach, where there were few symptoms save sudden pain and occasional vomiting, proved to be gall-bladder trouble, while the remaining small number were of duodenal or appendiceal origin.—W. J. MAYO in the *Canada Lancet.*

STAMPING OUT HEREDITARY DISEASES BY STERILIZING THE SEXES.

By M. E. Van Meter, M.D.,

SAN FRANCISCO, CAL.

That hereditary taint is a greater menace to the human race than all other evils combined, to which flesh is heir, every thinking physician and surgeon must admit. This great destroyer of, we might say, soul and body of mankind, not only shortens the lives of the human race in general, but prevents those suffering from the blight from attaining that fruition of physical and mental well-being that God and nature intended.

The evils of the hereditary curse are legion, and are to be met in every station of life; and are to be considered and contended with in a very large percentage of the cases which a physician is called upon to treat in his daily routine of work. The number of those who have to, in one way or another, pay the penalty of being the offspring of tainted parents, whose lives are shortened, and whose usefulness is depreciated, is simply appalling. And this number is increasing in a ratio that makes it a question of but a few generations more before no man can stand forth and say, "*My* blood is pure." As a result of this deplorable condition, we may well ask, "What are we coming to?"

It is not my purpose here to enter into a discussion of the present longevity and physical prowess of man, as compared with the same in past ages; but I do assert that, whether greater or less than in the past, and however great at the present time, animal-man, physically and the God-man, mentally, are both but pigmies to what they could and would have been had there never been instilled into the human blood that subtle poison which has never been eradicated, and which has never ceased to spread nor to lessen its contaminating influences.

Do we not daily witness the ravages of some disease the origin of which was pre-natal? Are we not, as medical men, daily confronted with conditions that confound us? Conditions for which we cannot account; and with which we cannot successfully cope? Yes, yes; and this perversity of condition depends on the perversity of a contaminated being.

Can anyone imagine what a race of beings we might be, if, starting with *pure blood*, for fifty generations there was not a contaminating element allowed to enter? It would be a race Solomon-like in wisdom, Adonis-like in symmetry and beauty and Sampson-like in size and strength. Except from some indiscretion in food or drink, in dress or from exposure, there would be no disease; and death would come only from violence or senility.

Of course, this is only a phantasm, a dream, and this millennium will never come; hence we shall deal with facts, and facts are stubborn things.

I now make the assertion, and without fear of successful contradiction, that more than half the ills which we are called upon to treat are influenced, to a lesser or greater degree, by a constitutional taint that affects the natural course of the disease, and affects, and sometimes vitally, the natural physiological action of the remedies we prescribe.

The most lamentable phase of this fact is that we do not and cannot know to what exent the symptoms, as manifested in a given case, are produced, changed or influenced by this subtle agent. Nor do we know how different the so-called physiological action of a drug may be when under this evil influence, and when acting under normal conditions.

These all being irrefutable facts, what are we to do? Just so long as present conditions are allowed to exist, just that long will we have this hydra-headed monster to deal with; and, as before stated, the time will come when every human being will be blighted by its poisonous breath.

To strike at the root of this evil, then, is our only hope. And to bring before the profession how best to do this, is the purpose of this paper.

I have studied and experimented on this subject for the past ten years, and I am now ready to say that the problem has been solved.

I began in 1896, experimenting on the proposition of rendering women sterile without producing any pathological conditions, or *physiological* change, whatever, except sterility.

After thinking over the anatomical construction and physiological functions of the uterine appendages, I arrived at the conclusion that the ovum, after being expelled from the ovary, and while traveling on its journey to the uterus, could be sidetracked without harming in the least the patient on whom this was done.

When I first made known my convictions, I was hooted at by some of my confrères, and all kinds of calamities were predicted. One suggested that the woman would cease to menstruate; another said she would have painful menstruation; another said the ovaries would dwindle away because they could not perform their natural function; and still another said I would convert the tubes into sacs filled with blood, which would, later, degenerate into pus.

After carefully and prayerfully giving due thought and weight to all of these consoling (?) and encouraging (?) suggestions, I determined to put my

ideas into execution; but I admit that it was with fear and trembling that I did so the first time.

I reasoned that the Fallopian tubes filled but a minor, functionary office, similar to that of the ureters, in that their sole service is that of transmitting the product of another organ, to still another organ whose only purpose is that of a receptacle to retain that product for a certain time, and then expel it; and that it matters not to the producing organ, after having performed its function, what becomes of its product.

The kidneys perform their function equally well, whether the urine passes, naturally through the bladder, or whether it is diverted through a fistula, opening through the back or into the rectum. So will the ovaries perform their function naturally, whether the ovum passes normally through the tube to the uterus, or is diverted into the peritoneal cavity.

Having reasoned thus, I also reasoned that I could accomplish this diversion of the ovum without in any way interfering with the blood or nerve supply of the ovaries; hence I could not see how *they* could be affected.

Method.—The first time I operated for the purpose of producing sterility, I simply ligated the tube on one side, and ligated in two places on the other side and cut between. Later, I ligated the uterine end only of the tube and cut, leaving the distal end free. This I did, that anything entering at the fimbriæ would have an unobstructed passage out at the end where cut.

I have now perfected the operation, until I do not believe it can be improved upon. I make a small slit through the peritoneal covering of the tube, at its proximal end, and hook up the oviduct (Fig. 1, a)—which is almost a counterpart of the vas in the male, except that it is much smaller—and sever it at its uterine juncture, reflecting the severed end, on the distal side, out through the incision in the peritoneal covering and closing the incision, with two or three continuous stitches of fine catgut, as shown in Figure 1, b.

By this last method there is absolutely no destruction, nor even disturbance of the nerves or blood vessels supplying the structures; hence, positively and absolutely, no interference in any way with the physiological functions normally performed by the ovaries and uterus. The tube, alone, is made unable to fulfil its office. The oviduct should be severed nearer the uterine body than shown in the cut. It should be made as close as possible.

A patient thus operated on could never know that the operation had been done—where the abdomen had been opened for other cause—so far as concerns any effect upon her menstruation or sexuality, or by reason of any other abnormal condition or feelings.

Before taking up the question of sterilizing the male, I want to go on record as saying that not one-millionth part of the flow in a normal menstruation passes through the tube; nor one-millionth part of the seminal fluid passes through the vasa in the male. In both cases it is only a microscopic entity that passes; and this entity is equally harmless whether it passes *via naturales,* to its ultimate destination, or whether it be diverted into the peritoneal cavity, or into the scrotal tissues.

Furthermore, if, as is generally believed by the laity, and to some extent by a certain per cent. of the profession, the seminal germ is the *vital* part of man, and his vitality is lowered in proportion to the loss of this germ, then he who was so fixed that he could not lose this germ, would be the gainer, and *not* the *loser,* by having had done the operation I propose, and which I now describe.

The operation to sterilize a man is much more simple, and I would say, much less dangerous than that for sterilizing a woman; though I consider neither of them dangerous, with our present surgical knowledge and technic.

To sterilize a man, I simply remove a section of the vasa. This is done thus: Inject a little cocain, or other local anesthetic at the site of contemplated incision; then grasp the scrotum with thumb and finger, and separate the vas from the other structures of the cord, and bring it to the site of incision. Cut down upon and hook up the vas, and draw out a loop (Fig. 2, c) and excise ½ to ¾ of an inch. Close scrotal wound with couple of stitches, as shown in Fig. 2, d.

This operation will not stop a man from ordinary, light work; for more than one day at most.

Though I have not tried it, I conclude that it would not be a safe proposition to ligate the vas without section; it has a direct continuity with the organ whose secretion it is to carry, and the ligation would thus cause a damming up of the secretion within the testicle, that would, in all likelihood, cause trouble, though I know not what.

In this respect the vasa differ from the tubes, which have no direct connection with the ovary. But I have ceased to ligate the tubes, except that where, from any cause, I am unable to hook up the oviduct, I ligate on the uterine side of the tubal section. This I do to prevent any infectious germs passing outward from the uterine cavity. The necessity for this precaution will be seen later, when discussing the class of cases to which this operation

is applicable for other purposes than the production of sterility.

I wish to here state that I have had the opportunity to operate on but one man; though I have been experimenting on animals for the past three years. As to operating on the tubes, I have done this so often that I have lost track of the number, but I think it is near the one hundred mark, and, thus far, without an untoward symptom or sexual effect.

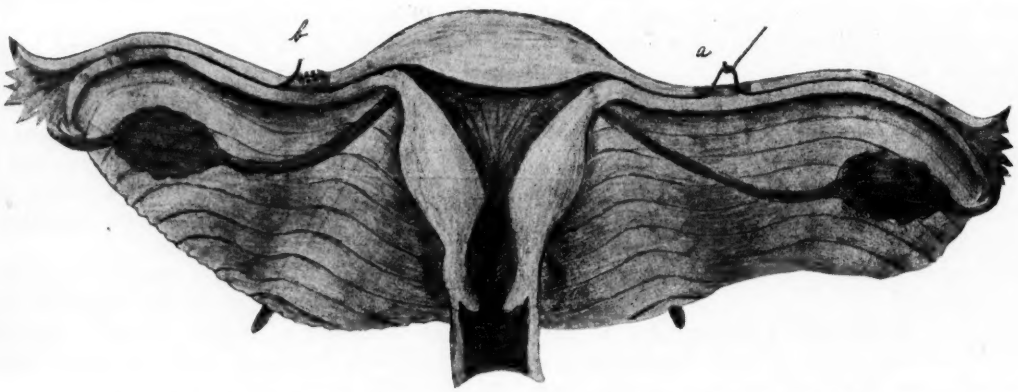


Fig. 1. Sterilization of the female. *a*, hooking up the oviduct. *b*, distal end of tube reflected into peritoneal cavity; incision sutured.

The man on whom I operated I have not seen for a year; but when last seen, he said the operation had not affected him, sexually; and the testicles, if affected at all, were in better condition than at the time of operation, having been rather flabby at that time.

In my experiments on male animals, I have demonstrated that I absolutely make them *sterile*. But I have not been able to decide what effect, if any, the operation has on them, sexually. All of my completed experiments have been on adult animals; and anyone at all conversant with the lives and habits of domestic animals, knows that those that have reached maturity before castration, are just as rampant for the female after castration as before. But I will soon be able to know what effect section of the vasa will have when done on young animals.

Last summer I operated upon a bull calf, four or five months old, and then gave it back to the former owner, on the agreement that he is to keep it until of proper age for service, and then to make full report to me on these questions: What effect has been produced, sexually? What effect has been produced on the testicles. What effect has been produced on the size and shape of the head and horns? What effect has been produced on his pugnacity? What effect has been produced on the size and shape of the animal, generally?

The calf is now eighteen months old, and I have this report to the above questions: "The calf is doing fine. He pays as much attention to the cows as other bulls of his age. His testicles are like those of other bulls of the same age. His head and neck are like those of other bulls. Cannot tell about his horns, as he is a 'muley.'"

In operating on the vasa, the same care to not disturb the nerve or blood supply should be observed as in operating on the tube; and in both cases, the utmost precaution to prevent sepsis should be observed.

The greatest minds in the world are now considering, and favorably, too, the question of matrimonial legislation. They hope the time will come—and it surely will—when every person wishing to enter into the marriage relations, will have to submit to a mental and physical examination. Those found with either mental or physical defect, especially if this defect be of such nature as may be transmitted to offspring, shall not be allowed to marry.

As such a law would be robbing mankind of one of the dearest of God-given rights, it will be a difficult matter to have that law passed; and when it is passed, it will be evaded in every way possible.

How much better will it be to have a law that will say to the unsound: "You may marry, but you must first submit to an operation that will prevent you from inflicting upon coming generations the taint that is within you as the result of the misfortune or folly of yourself or your ancestors."

This law should be applied, not only to those with a physical or mental taint, but to every criminal who

commits an offense of such magnitude that the penalty may be a term in a state's prison.

An habitual and confirmed drunkard, man or woman, especially if the predisposition to this habit is inherited, should also be subject to this law.

We all recognize the influence and effects that environments have upon the children and youth of our land, and even upon adults. Then what are we to expect of a child begotten in debauchery, and reared in the midst of filth, degradation and crime? Of a child whose mother from the hour of conception to the birth of the child, if not herself dissipated, has had to contend with a dissolute, drunken and abusive husband? Of a child whose first look falls upon a drunken father? Of a child whose earliest recollections is of poverty and squalor, of street fights and discord and brawls at home, of profanity, vulgarity and illiteracy on every hand; and who grows up poorly dressed, poorly fed, with little or no education, and with the seeds of some horrible disease sown in the system? When such a child grows up and goes wrong—and the chances are largely in favor of its doing so before it is grown up—we mete out to it the severest punishment. Punishment for crimes for which, from the very nature of things, it is not responsible!

Fig. 2. Sterilization of the male. *c*, hooking up the vas. *d*, vas resected and wound sutured.

How much better, how much more just, how much more humane would it be to stop the begetting and rearing of such children, and under such circumstances! The maxim that: "An ounce of prevention is better than a pound of cure," is never more applicable than in this case.

Now, I fully believe that when the people are convinced that a harmless operation can be done that will prevent the begetting of degenerate offspring, they will be ready for such a law, and will compel choice between submission to such operation and remaining single. And such law would be more easily passed than a law which would entirely prohibit the marriage of persons whom a Board of Examiners might pronounce unfit.

What father, if he knew that he had the seeds of tuberculosis or of syphilis lurking in his blood, could be so selfish, so heartless, as to want to be the father of a child who might be born deaf, dumb or blind, or, what would be a thousand times worse, imbecile, or escaping these, be afflicted in other ways with the effects of a disease inherited from him? What mother would not rather see her son dead, than behold him a drunken, dissolute criminal? And would she not consider it a boon to have no son at all, rather than to have one born with a predisposition to strong drink and crime?

Concerning the operation on the tubes for other purposes than preventing heredity: I have done the operation in cases where, from deformed pelvis or other causes, a woman could not give birth to a full-term child. In cases of women of the "half-world," on whom I have operated for single pyosalpinx, I would feel myself, to say the least, criminally derelict in my duty, to close the abdomen leaving the other tube subject at any time to a similar condition, and thus expose the patient to another attack of sickness, suffering and a life-or-death operation.

In any case where a woman has *fully* and *determinedly* made up her mind that she *will not* have any child, or another one, and says that if she becomes pregnant, she will interfere with it at whatever cost, even if it be her life, I advise her to "get fixed" so that she will not become pregnant. I consider it a much less wrong, morally, legally and physically, to thus prevent pregnancy, than to become pregnant and then destroy the fetus.

I say, I thus advise such erratic cases; but I have never opened an abdomen to do this operation without a better reason than to please a foolish fancy.

I have recently read in two of our leading medical journals, articles by surgeons of some note, upon the subject of ectopic pregnancy. Both writers referred to the liability of a woman who had had a tubal pregnancy on one side to have a like misfortune on the other side; and both of them discussed the justification of removing the ovary on the *well* side to prevent future trouble.

Think of such a procedure! When a woman has unfortunately lost one ovary, to rob her of the other; when the simple operation I have devised would prevent the possibility of a future pregnancy, tubal or otherwise, and yet leave the patient as though no operation had been done (except to make her sterile)!

To sum up:

The Reasons for the Operation.—To stamp out hereditary diseases. To prevent offspring by those predisposed to crime. To prevent offspring by those who, by heredity or otherwise, have an uncontrollable desire for strong drink or harmful drugs. To prevent those who have had ectopic pregnancy or venereal pyosalpinx on one side, from having future like trouble on the other side. To prevent the pregnancy of any patient with a contracted pelvis, or in one who, from any cause, could not give birth to a full-term child.

In cases where it is only a whim of the patient; or cases where for more just reasons—though not a physical impossibility—a patient is determined to not have children, I leave each individual case to the conscience and judgment of her physician; whether he would better prevent pregnancy, or let her go on in the dangerous practice of child-murder.

The Effects of the Operation.—It will increase longevity of the human race. It will decrease crime. It will increase the size and strength of mankind. It will prevent hereditary inclination to alcoholic drinks and the use of noxious drugs. It will prevent the greater part of chronic diseases. It will lift a world of burden from the minds of those who cannot or should not bear children. It will *positively* have no bad effect sexually or physically, and will change the physiological functions of the parts directly involved. It will make mankind a larger, stronger, healthier, happier and better race of beings.

A FATAL CASE OF HYDROCHLORIC ACID POISONING.

By J. L. WOLLHEIM, M.D.

Assistant in Surgery, Mt. Sinai Hospital Dispensary, NEW YORK.

While cases of this nature are of interest chiefly from a pathological standpoint, yet it appears to me that since poisoning by concentrated hydrochloric acid is of rather infrequent occurrence, I may be pardoned for presenting briefly a report of a case without necropsy, which I recently had under observation.

R. W., female, aged forty-five years, married, swallowed about an ounce and a half of concentrated hydrochloric acid. Immediately realizing her mistake she called for help. She was promptly given milk by members of her family, and vomited this at once in very large curds. She then complained of severe pain in the mouth and throat, and along the esophagus, and severe gastric and abdominal pain. On the arrival of a colleague and myself about fifteen to twenty-five minutes after the accident, there was administered at once the only alkali handy, sodium bicarbonate, ad. lib., in solution; and immediately we proceeded with lavage of the stomach. About one ounce of sodium bicarbonate, dissolved in one quart of water, was poured into the stomach through the tube, but it could not be withdrawn by syphonage or the pump. Upon withdrawal of the tube it was found plugged with thick ropy mucus. Another attempt to wash out the stomach was futile either because of the large quantities of mucus present, or possibly because of perforation of the stomach due to the acid.

The patient was given apomorphin hydrochlorid, gr. 1/10, hypodermatically, and this having failed to produce emesis in five minutes the dose was then repeated, also without effect. The patient still conscious and complaining bitterly of pain in the mouth, throat and abdomen, she was given hypodermatically morphin sulphate, gr. ¼, and atropin sulphate gr. 1/100; and more sodium bicarbonate was administered. At this time she complained bitterly of thirst, mucus was flowing freely from her mouth, and swallowing was difficult and painful.

There remained little to be done except by medication. In spite of all our efforts at stimulation—strychnin, atropin and whiskey hypodermatically, and saline enemata—the patient went into collapse. This was about one hour and a half after taking the acid. She developed pulmonary edema and died of respiratory failure about five hours after the fatal draught.

Examination of the mouth showed a thickened tongue with grayish white patches on it as well as on the mucous membrane over the gums and palate. The abdomen was somewhat distended from the first and very tender, the slightest touch giving excruciating pain, particularly over the stomach, the outlines of which, however, could not be mapped out by percussion or palpation. Liver dulness was diminished to about one and one-half inches above the free border of the ribs. There were no symptoms of edema glottidis, as is said to develop in some of these cases. There was, however, absolute constipation, as mentioned by some authors.

It is to be regretted that a post-mortem examination was unobtainable (the poisoning was purely accidental). It would have been of interest, among other things, to determine whether the failure of the soda solution to return was due to mucus, or to a perforation of the stomach and escape of the fluid into the peritoneal cavity.

308 EAST SEVENTY-NINTH STREET.

American Journal of Surgery

PUBLISHED BY THE

SURGERY PUBLISHING CO.

J. MacDONALD, Jr., M.D., President and Treasurer.

92 William Street, N. Y., U. S. A.

To whom all communications intended for the Editor, original articles, books for review, exchanges, business letters and subscriptions should be addressed.

SUBSCRIPTION PRICE, ONE DOLLAR

FOREIGN, SIX SHILLINGS

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It is of advantage to submit typewritten manuscript; it avoids errors.

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WALTER M. BRICKNER, M.D., Editor

NEW YORK, JANUARY, 1907.

ANESTHESIA IN MINOR SURGERY.

The question of the anesthesia very often establishes, in a wide range of operative cases, the decision between treating them in the office or in the out-patient clinic, and attending to them in the home or in the hospital. While some conditions that may be operated upon under local anesthesia or even without anesthesia require, nevertheless, that the patient be put to bed immediately thereafter, there are even more operative conditions—presenting themselves, especially, in dispensary practice, and many of them by no means trivial in character—that can well be managed in the ambulant fashion if the problem of anesthesia can be provided for.

The rule scarcely admits of exceptions that neither ether nor chloroform should be administered to an adult unless provision is made for him to remain in bed at least several hours after the narcosis. Infants and small children, however, may with reasonable safety be chloroformed in the office or dispensary, for they usually recover quickly and, moreover, they can be easily carried home. The reasonable safety presumes, however, that the anesthetist is experienced and cautious, that care has been taken to exclude the presence of an active heart lesion and of the status lymphaticus and, preferably, that the stomach is empty.

Nitrous oxid gas is, no doubt, the safest anesthetic in our list and it may be used with comparative freedom, for brief operations. Indeed, in the hands of a few experts, it may be administered for fairly prolonged operations. What can be accomplished with it depends in large measure upon how well it is manipulated. Speaking generally, however, it has certain disadvantages that make it unsatisfactory for routine use in minor surgical work. Chief of these is the fact that it seldom secures relaxation. For this reason it is not the anesthetic of choice in such cases, for example, as fracture and dislocation reductions.

Ethyl chlorid has been steadily growing in favor as a substitute for nitrous oxid, which, on several counts, it quite deserves to supersede. In the long run it is probably little, if at all, more costly than nitrous oxid; it requires no bulky outfit; its administration is scarcely more difficult; it secures sufficient relaxation in most cases. The patient is quickly narcotized and as quickly recovers. A severe, but usually short-lived headache frequently follows its use. If the patient has been prepared he seldom vomits; if not prepared, he seldom fails to.

Ethyl chlorid is a "safe" anesthetic, certainly much more so, at any rate, than chloroform or ether. Within the past year McCardie, in the *Lancet,* and Luke, in the *British Medical Journal,* have collected reports of several deaths from ethyl chlorid narcosis. From these lists some may be subtracted because the deaths cannot be fairly attributed to the anesthetic, because the narcotic was improperly administered or because the case should obviously not have had a general anesthetic administered. Eliminating these fatalities, there remain, however, enough to show that ethyl chlorid narcosis has a small but by no means negligible mortality. This does not indicate that the drug cannot with reasonable safety be employed as a routine narcotic in dispensary and office work. Rather, it emphasizes that its administration should be entrusted only to experienced hands; that only a pure product should be used; and that, neither with this anesthetic nor with any other, should very old or very feeble patients, or those suffering with marked circulatory or respiratory disorders, be submitted to general narcosis, except with such cautions and preparations as cannot obtain in the out-patient service or in the office.

Rarely, it happens that a patient cannot be anesthetized by ethyl chlorid, but he will be found equally refractory to nitrous oxid. All things considered, ethyl chlorid appears to be the most acceptable narcotic for ambulant cases, other than infants. The editor makes this statement with the confession that he has had scant experience with the bromid of ethyl—a drug that has found no great favor in this country, and has proven less safe than the chlorid.

In a large variety of operations, those especially, in which the field of manipulation is not large and in which neither unconsciousness nor general relaxation is required, local anesthesia amply suffices. As the technic of its employment has been elaborated its usefulness has widened. Two of the most important details in the development of that technic are the employment of weak solutions and the proper infiltration of the skin by *endermic* injections. A little patience, and care to secure anesthesia of the entire length of the skin incision and of such of the deeper structures as are sensitive, are also essential, as are strict asepsis and attention to the condition of the solution used.

What can be accomplished by those who have given care to the acquisition of an accurate method of local anesthetization, is often a surprise to colleagues who have given little attention to the subject. Indeed it has, perhaps, given rise to undue enthusiasm in one field, especially, where local anesthesia is peculiarly attractive—rectal surgery. Some there are who have produced the impression, not intentionally probably, that all the minor operations upon the rectum can be performed painlessly under local anesthesia. Others, also competent by experience to speak, recognize the limitations of local methods in this field, and adopt a more conservative spirit. In this connection we would call attention to the article by Dr. Jerome Lynch on another page of this issue.

Mere infiltration (distention) of the tissues, especially of the mucous tissues, by plain, sterile water, will secure more or less insensitiveness; but the anesthesia is not as satisfactory as that accomplished by solutions of drugs having a specific action on the nerve endings. Of these drugs the first introduced, cocain, has been, and probably still is, the most used. This in spite of two marked disadvantages that it possesses—difficulty in securing an aseptic solution and a decided toxicity. Individual susceptibility to cocain poisoning varies so much that disagreeable sequels often appear where they are least expected.

These objections to cocain have stimulated the search for acceptable substitutes, and certain synthetics have been discovered, solutions of which are easily prepared by boiling in water, are relatively non-toxic and are equally as anesthetic as cocain.

The employment of adrenalin in admixture with the anesthetic solution is exceedingly useful in many instances. It involves, however, a tendency to secondary hemorrhage for which provisions must be made.

The ethyl chlorid spray is exceedingly handy for small, rapid incisions, but the anesthesia is only relative. In inflamed tissues, especially, the freezing must be deep and thorough; and it must be remembered that the freezing itself is a rather painful process.

Spinal anesthesia deserves no place in this consideration. It is obviously unsuited for ambulant cases.

RAPIDITY IN OPERATING.

With the discoveries of anesthesia and asepsis the brilliancy and rapidity of technic cultivated by the older surgeons became for a time a minor consideration, and efforts were mostly expended in developing fields of surgery which had been previously closed. With the surety, however, that comes with larger experience, more attention is being paid to the question of technic proper. During the past year a number of papers has appeared, prominent among which may be mentioned those of Robert T. Morris and Maurice Richardson, regarding the value of rapidity in operating. The importance, in particular, of performing abdominal sections rapidly is becoming more and more recognized, and there is no question that the condition of shock is more nearly proportionate to the time consumed in operating than to any other factor. That an operation should be done as rapidly as is expedient requires no argument. But it is one thing to operate rapidly and another to do so properly. The rapidity with which an operation should be performed is a very relative matter indeed. It would be manifestly unfair to sew up a typhoid perforation or to enucleate a prostate in a patient aged sixty-five, in the same ratio of time as that which we would expend in a radical amputation for carcinoma of the breast. We acknowledge the brilliancy of a surgeon who sews up a typhoid perforation in ten minutes, but we would hesitate to express our approval—at least before the classical period of three years is up—if he extirpated a cancerous breast and axillary glands with proportionate rapidity. We would prefer the extra per cent. risk of mortality to that of having a half-dozen cancer cells left behind in some obscure gland in the axilla. The remote as well as the immediate mortality must be considered. E. M.

ANNOUNCEMENT.

Unavoidable delays in the preparation of the series of articles on Surgical Postures by Dr. M. W. Ware, have postponed its publication, which, however, we confidently expect to begin in the next issue.

Surgical Suggestions.

Cold abscess and lipoma often simulate each other very closely, especially around the chest. If in doubt, aspirate.

A history of attacks with symptoms of esophageal stricture and intervening periods of well-being is suggestive of cardiospasm.

Have the tracheotomy instruments handy before operating upon a case of angina Ludovici.

In "Ludwig's angina," the cardinal principle in the treatment is extensive incision. An incision that passes no matter how deep into the substance of the submaxillary gland proper, will prove of little avail unless the tissues within the wound have been broken up until they are practically pulpy.

In the presence of a hard, diffuse chronic swelling in the neck having some of the appearances of a malignant growth, the possibility that the tumor is a so-called "woody phlegmon of Reclus" must be considered.

All swellings of the lower jaw accompanied by discharging fistula, especially multiple fistulæ, should be looked upon with the suspicion of actinomycosis until proven to be otherwise.

It is a wise rule to submit all removed hypertrophied prostates to thorough examination by a pathologist. Carcinomatous degeneration may be found in some spot.

Carcinoma of the prostate often does not recur for some time; meanwhile the patient may look surprisingly well. This should not beguile the surgeon into a too hopeful prognosis.

If a bubo shows no sign of disappearing under wet dressings, ice bags, etc., and evidences of suppuration are developing, it is better to make a clean dissection and excise the gland without opening it than to incise and drain.

In cases of renal colic do not make too positive a pre-operative diagnosis of calculus, no matter how typical the symptoms may be. It has happened very often at the time of operation that no stone is found. Fortunately, these cases are nearly always cured by the exploratory nephrotomy.

Never divide the annular ligament of the wrist. The hand is much weaker after it is divided than before.

The surgeon should not wait for redness before making a diagnosis of palmar abscess. Owing to the density of the fascial structures this sign is often lacking in the early stages.

Amputation of a finger gangrenous as the result of carbolic acid application should not be performed until the line of demarkation is well established. The necrosis may be superficial and in such an instance the finger may be saved by means of skin graft.

In the treatment of hand and finger infections, it is very important to release from bandaging as much and as many of the fingers as possible, and as soon as possible. The habit of bandaging up immovably all the fingers, in the treatment of a lesion of some of them, saves the surgeon time but, except in short cases, it often cripples the hand by stiffening the fingers.

Do not operate for foreign body in the knee joint without first excluding dislocation of one of the semilunar cartilages.

In amputations below the knee, insist on active and passive motion in the knee joint at an early date. If this is not done contracture ensues, which makes the application of an artificial limb difficult.

In compound fractures involving loss of continuity do not needlessly remove any piece of bone that has even the smallest attachment. It is surprising how often such pieces heal into the wound and thereby help to save loss of substance.

Fractures of the neck of the femur in old people sometimes cause no other symptoms than disability The mildness of the trauma and the freedom from much pain should not deceive one.

The radiograph of the elbow of a child shows shadows of numerous epiphyses. One inexperienced with x-ray plates is very apt to mistake one or more of these for fractures. When examining the skiagraph of a child's elbow suspected of fracture or dislocation, it is, therefore, important to have the normal picture in mind, or better yet in hand, for comparison.

Book Reviews.

Surgery, Its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D., HON. F.R.C.S., ENG. AND EDIN., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, etc. In five volumes. Vol. I. *History. Surgical Physiology. Surgical Pathology. Infections. Tumors. Wounds, etc.* Royal octavo; 983 pages; 261 illustrations and 17 colored plates. Philadelphia and London: W. B. SAUNDERS Co., 1906. Cloth, $7.00 net; sheep or half morocco, $8.00 net.

We have looked forward to this volume with high expectations. The preliminary announcements of the scope of the book, the editorship of Dr. W. W. Keen, and the list of contributors all led us to believe that the work must necessarily prove of great merit. A perusal of the first volume has to a large extent confirmed our expectations, and if the succeeding volumes are of the same order, the series will undoubtedly take an important place among the standard works on surgery. It is peculiar that, although on other medical subjects there have been numerous publications in this country in recent years, there has not been as yet any comprehensive work of American surgery, so that our surgeons have had to depend largely on foreign publications. Inasmuch as of the sixty-six contributors to this series only four are foreign, the work is sufficiently representative to be called distinctly American.

The general plan is, on the whole, good. Multiple authorship always carries with it the disadvantages of lack of unity in design, and the tendency to repetition. As an instance of this, we may mention here that the therapeutic use of anti-streptococcus serum is mentioned three times in the course of this volume. On the other hand, these disadvantages are largely counterbalanced by the freedom from excessive individuality, the greater variety of expression and the fact that each heading is written by a specialist whose name has been more or less closely associated with the topic under discussion. Tastes will necessarily differ widely as to the selection of writers; there are some names which appear to us to have been more closely associated with certain topics than those that have been selected, but on the whole the publishers and editor have shown good judgment.

The first volume comprises the basic principles of surgery and includes the following chapters: A Narrative of Surgery; Surgical Physiology; Examination of the Blood; Infection and Immunity; Inflammation; Suppuration, Abscess, Fistula; Ulceration and Ulcers; Mortification or Gangrene; Processes of Repair; Thrombosis and Embolism; Erysipelas; Tetanus; Diseases caused by Special Infections; Diseases derived from Animals, Insects and Reptiles; The Traumatic Fevers; Scurvy; Rickets; Tuberculosis; Contusions and Wounds; Chancroid; Syphilis and Tumors. In order to avoid unnecessary repetition, we believe some of the headings might have been grouped together; for instance, "inflammation" might have been included under the heading "repair," or vice versa, inasmuch as they are evidences of one and the same processes. In addition, many of the diseases discussed under a general heading might have been better included under an anatomical. It is true, there are numerous cross references, but they do not appear to us nearly sufficient. On the other hand, we are surprised there has not been included a chapter on the general subject of "hemorrhage."

The opening chapter on the "History of Surgery," by J. G. Mumford, should be read by everybody. It is very vividly told and the style of recital is a relief from the dry and matter-of-fact narratives that are usually found. "Surgical Physiology," by George W. Crile, is novel in works of this character and contains the author's familiar and recognized work on Shock. The chapter on "Blood Examination," by J. T. Da Costa is well written. We believe more attention might have been drawn to blood cultures and their significance. "Infection and Immunity," by L. Hektoen, and "Inflammation," by J. G. Adami, are worthy of the high standing of the authors. Especially to be commended is the chapter on the "Processes of Repair," by F. T. Wood. It is a combination of original research and a thorough study of the literature, and is altogether a model of its kind. The illustrations are particularly good. Under "Hydrophobia," by C. H. Frazier, we might expect in subsequent editions more mention of the specific character of the negri bodies, and in "Surgical Tuberculosis," by Da Costa, we miss any reference to the important work of Wright on opsonins. The other chapters, with the exception of the two following, are in every respect satisfactory. "Traumatic Fevers," by E. H. Smith, is not quite up to the standard of the rest of the work. It is written in a diffuse, rambling style and leaves a rather hazy impression on the reader. The author makes little or no differentiation between the various types of bacterial sepsis, and diagnosis is but superficially touched upon. Moreover, the author shows an unfortunate tendency to wander from his subject. What the treatment of post-operative backache or of urinary retention, for instance, has to do with aseptic surgical fever is difficult to see. We also take exception to the statement on page 568, that "the antitoxin treatment of tetanus is extremely disappointing." The references quoted at the end of this chapter show that the author is not as fully acquainted with the best literature of the subject as he might be.

The chapter on "Tumors," by J. Bland-Sutton, offers a decidedly antiquated impression. This applies not only to the text, but also to the illustrations, which are of the old-fashioned wood-cut type, and in many instances, particularly the histological, very crude in character. As regards the text, we need only mention such instances as the expression, "chondrifyin gtumor," the lack of knowledge of the recent literature of cystic kidney, of glioma, and the absence of any discussion of the fairly prevalent tumor known as hypernephroma. We can readily understand the shortcomings of this chapter when we note that the author has devoted himself almost entirely to the study of the English literature, as evident in his lists of reference. We do not decry the value of the English literature on this subject, but in the study of tumors particularly, the Continental literature, and especially the German, cannot be ignored.

The make-up of the book is excellent and is a credit to the publishers. It is printed on smooth, glossy paper, eminently fitted for illustrative purposes. The illustrations are very numerous and, with few exceptions, entirely original. They are, with the above exceptions, excellent and are, indeed, a feature of the book. Typographically we have noted but two errors: Sauerbrunn on page 267 should be Sauerbruch, and Krausch on page 324 should be Kausch. There is a full index. We take pleasure in commending the work.

Die Tuberkulose der menschlichen Gelenke sowie der Brustwand und des Schaedels. Nach eigenen Beobachtungen und Wissenschaftlichen Untersuchungen von PROF. DR. FRANZ KÖNIG, Berlin. Octavo; 166 pages; 90 illustrations; paper cover. Berlin: AUGUST HIRSHWALD, 1906.

This monograph is dedicated to Prof. v. Bergmann in commemoration of his seventieth birthday. It represents personal observations of Prof. König, gathered during a professional life extending over more than twenty years. Before the discovery of the tubercle bacillus the author already upheld the tuberculous nature of some joint affections; after Koch's discovery he was able to prove this etiological factor in many more instances.

In the general part, the etiology is discussed. In most instances the tuberculous inflammation is secondary or metastatic, in about 21% it is primary. Predisposition and trauma play an important rôle. We must distinguish a synovial and an osseous origin, although either may progress and give identical clinical pictures. The three chief varieties are hydrops (sero-fibrinous), the granulating form, tumor, albus, fungus) and the tuberculous purulent joint inflammation (cold abscess of the joint). Wedge-shaped necroses are due to the blocking of an end artery in the bone by a tuberculous embolus. A progressive tuberculous osteomyelitis is also noted. Multiple joint involvement is uncommon, usually various joints becoming in-

volved at long intervals; acute miliary tuberculosis arising from a joint tuberculosis is very rare, though seen after operation in a few cases. The prognosis is suppurative improvement is worse than in the non-suppurative form (46%:25%). During 16 years' observation one-third of the patients suffering at some time with tuberculous gonitis died of tuberculosis developing elsewhere in the body. Hydrops is best treated with puncture and injections of iodoform-glycerin or a 5% carbolic acid solution; the fungus form by immobilization, puncture and injection, for the lighter forms, and operaturi for severe fungoid or suppurative inflammations. If a tuberculosis joint does not heal after one year's orthopedic treatment operation is indicated, although children can be given more time than adults. Arthrectomy (synovectomy) suffices for milder cases; resection is practiced in severer forms; they afford equally good functional cures (75%). When continued fever, emaciation, etc., continue, amputation must be resorted to (12%). The author has seen no good results from Bier's hyperemia; he also disapproves of ambulatory splints for the lower extremeties.

The special part treats of involvement of the joints of the hip, knee, foot, shoulder, elbow and hand, finally concluding with tuberculosis of the thoracic wall and of the skull. A detailed account cannot be given, but as in the first half, the text is replete with valuable original observations and deductions based upon an enormous number of cases.

Prevalent Diseases of the Eye. A Reference Handbook, Especially Adapted to the Needs of the General Practitioner and the Medical Student. By SAMUEL THEOBALD, M.D., Clinical Professor of Ophthalmology and Otology, Johns Hopkins University, etc. Octavo; 551 pages; 219 text-illustrations, and 10 colored plates. Philadelphia and London: W. B. SAUNDERS COMPANY, 1906. Cloth, $4.50 net; half morocco, $5.50 net.

The expression, "for the use of the general practitioner," is very common on the title page of medical text-books, but we have rarely seen a volume in which this phrase applies so closely as in the work before us. In order to carry out his intention, the author has discussed only such diseases as the general practitioner is liable to come in contact with, and has eliminated all descriptions of ophthalmoscopic examinations, tests for refractive errors of the visual fields and of muscular anomalies, etc. Treatment is discussed concisely and unambiguously, so that the practitioner shall not be perplexed by a multitude of remedies. Only the simpler operations are described. In addition, the author has sharply defined the occasions when emergencies may arise, so that the specialist may be consulted in time. The subject matter is very sound, and the volume is unusually well illustrated. The book can be warmly commended.

Obstetrics for Nurses. By JOSEPH B. DELEE, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago, etc. *Second Edition, Revised and Enlarged.* 12mo; 510 pages; 202 half-tone illustrations. Philadelphia and London: W. B. SAUNDERS COMPANY, 1906. Cloth, $2.50 net.

This edition contains 47 pages more than the first and 40 new illustrations. The book aims to appeal not only to nurses, but also to medical students and young practitioners, who will find here much useful information not usually contained in the ordinary text-books on obstetrics. Dogen are interesting but doubtful.

The nurse who masters these pages will be in a position to understand *why* she does the various tasks which fall to her, and will be in a better position to meet unexpected emergencies intelligently and efficiently. The young practitioner will also benefit by the perusal of the book, which gives many hints of practical points in nursing ordinarily acquired only by long, and often painful, experience. The author has succeeded in giving sufficient theoretical basis to his exposition, without burdening his readers with an unnecessary and confusing mass of detail. If any criticism were to be made it would be that a number of Latin expressions might with benefit be dropped in the next edition.

Progress in Surgery.

A Résumé of Recent Literature.

A Clinician's Observations of Opsonic Therapy. C. D. AARON, Detroit. *New York Medical Journal*, December 1, 1906.

The author spent some time in London with Sir A. E. Wright and now reports the results of his observations. The general impression is one of enthusiasm. Briefly, opsonins are certain unknown ingredients of the blood that aid phagocytosis by inhibiting the action of a given microorganism. Each organism creates its own opsonins. The amount of opsonin in a given patient toward a certain germ is determined by counting the number of bacteria in the polynuclear leucocytes obtained from the patient, after mixing a definite amount of blood with a definite number of bacteria. A general average of a large number of leucocytes is taken and this is compared with that attained in a normal person. This is the so-called "opsonic index." The opsonic index varies, and during infection by certain bacterial species the index for this particular species is below normal, or in Wright's phraseology is in the "negative phase." Now Wright has been able, by means of the injections of bacterial vaccines to increase the opsonic activity and thus render the patient able to cope with or to overthrow his infection. The vaccines at present prepared are suspensions in sterile normal salt solutions of pure cultures of various bacteria grown on the surface of agar only to the height of vegetative activity; the germs are killed by heating for thirty to sixty minutes at 60° C. To guard against contamination, lysol is added to the finished emulsion. Dosage is determined by administering an ascertained number of bacteria. Wright has devised an ingenious method for determining this. In tuberculosis, Koch's new tuberculin is used instead of a bacterial emulsion.

The diseases in which this method of treatment has been mostly used are long standing furunculoses, acne, chronic pyogenic infections, tuberculosis and malignant neoplasms. In the first four diseases the results that the author has seen have been, in his own words, "remarkable." And "striking." In malignant neoplasms, Wright has used for injection purposes, the once defunct "micrococcus neoformans" of Dogen. The author saw some benefit in these cases.

[The opsonic theory has already taken its place in seropathology. The recent reports of the value of this theory applied therapeutically seem to indicate that it will have a splendid future. Unfortunately the method requires a technic that cannot be very well resorted to in ordinary practice, but there is no reason why it should not be taken up by even fairly equipped hospitals. The results obtained by Wright in cancer with the micrococcus neoformans of Dogen are interesting but doubtful.—E. M.]

The Transplantation of Human Ovaries (*Transplantation menschlicher Ovarien*). H. CRAMER, Bonn. *Muenchener Medizinische Wochenschrift*, No. 39, 1906.

The experiments of Foà showed that the ovaries of young animals could be transplanted into other animals of the same species and still continue their function. Frank, Morris and others succeeded in transplanting human ovaries homologously (*i. e.*, into other parts of the same patient). The author has in two cases transplanted human ovaries heterologously (*i e.*, into other patients). The ovaries were obtained from two osteomalacic patients, from whom the ovaries were removed for therapeutic purposes simultaneously with operations on two other patients into whose abdomens the ovaries were to be transplanted.

As it has been found that the central portion of a transplanted ovary undergoes necrosis, the center of the ovary to be transplanted was scooped out and only the outside cortical layer was removed. The first case was that of a patient 23 years of age, married 3 years, who bore a dead child in March, 1904; after that she had only one menstruation, in August, 1904. Six months later transplantation was undertaken as the usual symptoms of the

menopause had developed—increasing obesity, hot flushes, small uterus, etc. The ovaries were found small and atrophic, of smooth appearance, with no sign of ovulation. Into the split left ovary, part of the ovary of a simultaneously operated osteomalicic patient was transplanted and fixed by suture. The other transplanted ovary was implanted in the broad ligament of the opposite side below the tube. Fourteen days after operation uterine bleeding appeared. One month later the breasts enlarged and contained colostrum, and another menstruation took place. The uterine cavity was found to have increased from 4½ to 7 cm. The left ovary feels greatly enlarged and the broad ligament ovary is plainly palpable. In May no menstruation occurred, but morning vomiting was noted. In June, after exertion, a severe hemorrhage developed, lasting seven days. This Cramer regards as evidence of an abortion.

The second patient was 36 years old. Four years previously another gynecologist performed a panhysterectomy for severe dysmenorrhea. Two years later the author relaparotomized for ventral hernia in the scar and exudate in the left stump (silk ligatures removed). Severe menopause symptoms had developed, with 30-40 daily attacks of vertigo and flushes. The transplanted ovaries were placed in the peritoneum of the anterior abdominal wall and into the remains of the right broad ligament, respectively. After the operation the menopause symptoms were not relieved. Eight weeks after operation the transplanted ovaries could still be felt, but two weeks later they had apparently been completely absorbed.

[The first case might very well have been due to hyperinvolution sometimes following pregnancy, and the subsequent menstruations may have been independent of the transplantation. The evidence adduced is insufficient to establish the occurrence of conception and subsequent abortion. The author acknowledges that the second case must be considered a failure. These cases are of great interest, but they throw no new light upon the feasibility and value of ovarian transplantation. Operators should always take out sections of the ovaries from their patients at the time of transplantation, in order that careful microscopical examinations can be made upon them.—R. T. F.]

The Treatment of Traumatic Injuries and Their Sequelae by the Surgeon (*Die Behandlung von Unfallschäden und deren Folgen durch den Chirurgen*). A. HOFFA, Berlin. *Medizinische Klinik*, November 4, 1906.

The x-ray has taught us that many, formerly overlooked, injuries of the bones accompany bruises, dislocations, etc., such as tearing away of the large tubercle in preglenoid dislocation of the humerus. Small injuries may produce fissures and fractures of the vertebrae; callus formation may press upon the intervertebral foramina. Following trauma an acute atrophy of the bone (Sudeck) is often set up; this shows in the skiagram as a weakened shadow with numerous light and dark areas. Often this atrophy will account for the patient's sufferings, which are not accounted for by the other purely objective signs. It is always necessary, however, to bear in mind that the x-ray findings are subject to variations, and therefore, wherever possible *the healthy side should also be photographed and compared with the diseased member.* This holds true especially of the hands and feet.

Bier's constriction hyperemia, combined with suitable incisions, is a great prophylactic aid in combating beginning septic processes. Early tenorrhaphy should be practiced in injuries of the tendons of the hand. In fractures not only an anatomical, but also a functional result must be aimed at. Early mobilization and massage (Championière) have ousted older treatments. In Potts' fracture, for instance, the plaster bandage is split after two weeks, and active movements (but not weight-bearing, such as walking) begun and practiced daily. Extension treatment (Bardenheuer) with adhesive strips, combined with massage, is especially applicable to joint injuries. Some injuries, such as traumatic coxa vara, are often not recognized until after healing (shortening, adduction, outward rotation and high position of the trochanter). In Hoffa's experience impacted fracture of the neck of the femur is best treated by careful re-setting in the correct posture, otherwise a varus position will result. If healing in a false position has occurred, a subsequent subtrochanteric osteotomy is indicated. Injuries of the bones of the leg or thigh may produce deformities of the knee. If untreated, osteotomies may be required later. Traumatic flat-foot requires the usual treatment, especially a flat-foot brace; if the valgus position is secondary, as that following Potts' fracture, it demands correction of the causative factor.

Excessive callus, which is most harmful in the vicinity of joints or of nerves, can be avoided by exact approximation of the bony parts, defective callus and pseudarthrosis, by preventing interposition of soft parts, by producing hyperemia, irritant injections, etc. Stiffening or ankylosis are avoided by not permitting prolonged immobilization; if ankylosis is unavoidable an optimum position should be sought. Interposition of muscle-fat flaps between bone ends may prevent ankylosis. Physico-mechanical therapeutics are of value, but they never can take the place of early and correct surgical treatment. It is well to combine hyperemia treatment with exercises.

Traumatic lumbago embraces many diverse conditions—strains of the sacro-vertebral joint and of the sacroiliac synchondrosis, bruises of the intervertebral disks, and stretching or tears of ligaments. Spondylitis traumatica (Kümmell) presents three stages, acute pain with functional disturbances, next a period free from all symptoms, and as a final stage the rapid development of a gibbus and all symptoms of an acute process in the vertebral column. The treatment consists in a plaster corset.

Acute arthritic muscular atrophies commonly follow bruises, sprains or subcutaneous hemorrhages. The extensors are most often involved, the joint unaffected. Massage is the proper remedy. *Dérangement interne* of the knee results from partial dislocation of a meniscus. Where operative treatment is indicated, a traumatic gonitis may result from a single injury. The patient does not take the proper care and a chronic inflammation of the fat and synovia is set up. The surgeon does not see the patient until years later. Partial arthrectomy is indicated if the trouble is sufficiently well marked. The chief point to bear in mind is that it is of the utmost importance to institute early and proper treatment immediately after an injury is sustained.

The Omentum and Its Functions. G. K. DICKINSON. Jersey City. *Annals of Surgery*, November, 1906.

The author reviews the embryology, anatomy and histology of the omentum, also sifting the detailed experimental literature dealing with this interesting organ. He draws the following conclusions:

1. The numerous bloodvessels and lax tissues of the omentum allow of storage of blood when the general arterial tension is high.

2. By venous anastomosis through adhesions, local congestion may be relieved.

3. Through its large surface freely exposed to surrounding parts in motion, it becomes a rapid absorber of fluids by the blood stream.

4. By the lymph stream it is a free carrier of white blood corpuscles, encapsulating solid particles.

5. Through its cohesive tendency, apertures in the abdomen into which the omentum has been forced by intraabdominal pressure become more or less completely closed.

6. Through its readiness to lymph formation and local proliferation, it becomes attached to infected parts, which are walled off, subsequently to be absorbed by phagocytic action; the peritoneal cavity is thereby protected.

7. The majority of phagocytes extruded into the peritoneum for its protection come through the omentum, largely from the general circulation, but in part from the tissues therein existing; subsequently to be attached to the surface of this tissue, taken into the lymph-stream, and subjected to the cytolytic influence existing there.

8. Lack of development of the omentum, or loss through operation, renders one less resistant to peritoneal invasion.

9. Hemolymph glands of the splenic type existing in its base supplement the spleen if the latter be removed or its function interfered with.

Peritoneal Plastic Operations by Means of Isolated Pieces of Omentum (*Peritonealplastik mit isolierten Netzstücken*). S. S. GIRGOLAFF, St. Petersburg. *Zentralblatt für Chirurgie*, No. 46, 1906.

The use of isolated pieces of omentum to cover peritoneal defects would mark an advance in surgery. Hitherto only omental grafts, with their connection to the rest of the omentum retained, have been used; this method produces dangerous artificial bands and adhesions. In the author's experiments dogs and cats, which possess a well developed adipose omentum, were operated upon in ether anesthesia. Stomach, large and small intestine, were either opened and incompletely repaired, or denuded of their peritoneal and muscular coats over an area of about 2.3 sq. cm. These various defects were covered with somewhat larger pieces of freshly resected omentum, which was fastened to the healthy serosa beyond the edges of the defects. The omental stump due to the resection was always buried to prevent adhesions. Injections, at varying but increasing intervals, of Berlin blue mixture through the abdominal aorta of the freshly killed animal showed that as early as 24 hours after operation the capillary circulation in the graft begins to be re-established, while after 48 hours a sufficient circulation has been formed. The grafts always remained bright, glistening and normal in appearance. Even when infection occurred no necrosis or sequestration of the graft took place. Over the stomach, large intestine and bladder, under aseptic conditions adhesions were completely prevented, but on the small intestine the results were not favorable. The grafts can also be employed to cover defects in solid organs, as, for instance, the liver.

Relaxation of the Sacro-iliac Synchondrosis, with Report of Cases. JOHN DUNLAP, Washington. *New York Medical Journal*, December 8, 1906.

This condition was first recognized by Goldthwait in 1905. Among the most common causes may be mentioned, pregnancy, traumata, sudden wrench or so-called "stitch in the back," long recumbency, typhoid fever, or the commoner joint diseases. Blows and falls are the most frequent causes. Symptomatically, these cases are characterized by backache more or less constant, pain in walking, and sciatic pains. The pain is usually referred to one or the other sacro-iliac joint. The signs of this disorder are prominence of the sacrum, muscle spasm, lateral curvature of the spine, obliteration of the spinal curve, and swelling due to distension by fluid. On palpitation, the joint is tender and there is free mobility which may be determined in a number of ways. Differentially, this disorder must be diagnosticated from hypertrophic or osteo-arthritic spine, sciatica, neurasthenia, lumbago, muscular rheumatism and typhoid spine. The author goes into the differentiation rather fully. Treatment concists in some variety of support, either in the form of strapping, a corset or an elastic belt. The author reports six cases.

The Clinical Significance of Cervical Ribs. J. B. MURPHY, Chicago. *Surgery, Gynecology and Obstetrics*, October, 1906.

Since x-ray diagnosis has been introduced the diagnosis can be made in the pre-aneurysmal, pre-gangrenous and pre-paralytic stage. The condition is one of atavism, as the embryo and lower forms have a rib connected with each vertebra. Other congenital malformations are often found associated with cervical ribs. The left side is more often affected, although on account of the freer use of the right arm, the condition produces symptoms more often on the right side. Women constitute the great majority of patients, the reason for this being unknown. Cervical ribs are either incomplete or complete; if of the former variety the subclavian artery passes over the rib if it is 5.6 cm. or more in length. The symptoms develop at the time of puberty, and heredity seems to play an appreciable rôle.

The changes involved produce arterial and nervous symptoms. Of the arterial symptoms the chief are weak or absent radial pulse, diminution of the radial pulse during inspiration, pallor and coldness of the hand, subclavian aneurism, and high situation of the subclavian artery as it passes over the rib. The pressure on the nerves causes tingling in the hand, hyperesthesiæ and paresthesiæ, neuralgic pains, and pareses similar to those seen in lesions of the first dorsal branch of the brachial plexus. There may be intermissions of symptoms. A scoliosis, and rigidity of the cervical spine with a fixed torticollis is commonly observed. The diagnosis is facilitated by noting the high position of the subclavian artery. X-ray examination may prove deceptive. Primary peripheral nerve lesions, diseases of the spinal cord and a sometimes coincident syringomyelia must be differentiated.

An incision for extirpation, which is the only reliable treatment, should be made vertically in the neck just anterior to the roots of the brachial plexus. The subclavian artery is met with on the upper surface of the rib, behind the scalenus anticus. The artery is pulled back, the rib freely exposed and separated from its vertebral attachment, and then removed with its periosteum. Murphy reports two cases successfully operated upon.

The Attitude of the Clinician in Regard to Exposing Patients to the X-Ray. D. L. EDSALL, Philadelphia. *Journal of the American Medical Association*, No. 18, 1906.

The dangers from the constitutional effects of the x-ray are very well brought out by the author. As he says, the lateness of the recognition of these effects is one of the remarkable facts in the medical history of this powerful agent. His study of the subject during the past eighteen months has shown that the rays have effects on metabolism, in some instances most violent, occurring even in normal individuals, and that these are apparently present whenever a general influence is clinically observable. These metabolic changes are due largely, if not entirely, he thinks, to tissue destruction, as shown by a relatively large output of uric acid, purin bases and phosphate indicating the excess of nucleoprotein destruction. Histologic studies by Warthin and others show that the organs most affected are the bone, marrow, spleen and lymphoid tissues. Edsall says that the effects of a single dose may be more severe than those of a similar dose of any other therapeutic agent with which he is acquainted, and may be either very useful clinically or so dangerously violent as to hasten death, or even to cause it, where it might otherwise have been avoided. He has known of two deaths from this cause. He thinks we will have to recast our views somewhat; instead of considering the x-ray as an agent only secondarily and somewhat distantly harmful, we should recognize in it an agent as effective as a powerful drug, and one not to be used without good and sufficient reasons and with all needed precautions. The x-ray specialist, moreover, should be fully informed as to all possible contraindications so as to be able to employ reasonable caution in his applications. Edsall compares the x-ray to anesthetics which no one thinks of recommending without due consideration of their possible dangers in any particular case. He mentions two groups of disorders that seem to him to deserve more careful consideration in this connection than others. One of these is nephritis, the other includes patients suffering from any serious degree of toxemia. A possible third group includes patients with decided anemia, especially if combined with toxemia. He believes that there are decided therapeutic possibilities in the action on metabolism of the x-ray, but it must be used with a definite appreciation of its restrictions.

Catgut Sterilization (*Zur Catgutsterilization*). C. STICH, Leipzig. *Zentralblatt für Chirurgie*, No. 46, 1906.

The author used the organic silver salts in 1903, but now finds that silver nitrate acts equally as well and is cheaper. To a 1% alcoholic solution of silver nitrate ammonium hydrate is added drop by drop until the precipitate which forms is redissolved. The catgut, wound upon glass plates, or loosely rolled in single strands, is immersed for 15-30 minutes in this solution, but protected from the sunlight. After washing with alcohol the gut is exposed in a sterile glass container to the effect of the sunlight, which produces a reduction of the silver salt. The material is now stored for permanent preservation in a solution of absolute alcohol with 10% glycerin.

The time allowed for impregnation suffices to permit

complete diffusion of the silver into the thickest catgut. The tensile strength is increased during the process (from 2.9 to 4.2). Tests with anthrax cultures showed the effectiveness of the sterilization. The finished product is soft and elastic, producing the sensation of handling thin leather thongs.

Iodin Catgut Prepared By a New Method (*Jodcatgutpräparation*). BURMEISTER, Concepcion. *Zentralblatt für Chirurgie*, 1906, No. 45.

Instead of using the ordinary Claudius' solution, the chloroform-iodin formula of Chassevant is employed—metallic iodin 1.0, chloroform 22.5. The solution must be prepared in the cold and it is unnecessary to weigh the quantities, as the formula represents full saturation. The catgut is wound in a single layer on glass spools and submerged for one week just as in Claudius' method. To use the gut, it is exposed for a few minutes, when all the chloroform will be found evaporated, or it may be immersed in any sterile or antiseptic solution. The catgut is pliable, soft and does not swell when in contact with the body fluids.

Excision of Cancer of the Head and Neck. With Special Reference to the Plan of Dissection Based on 132 Operations. G. CRILE, Cleveland. *Journal of the American Medical Association*, No. 22, 1906.

After remarking that cancer of the head and neck is fatal only by direct extension and not by secondary foci in distant organs, Crile points out the essentials of the surgical treatment in this region, especially the necessity of complete and thorough operation. He urges the necessity of guarding against infection by isolating the mouth and air passages and controlling hemorrhage by temporary closure of the external carotid, following the details as described by him in former articles. In his own operative cases, 132 in number, out of forty-eight traced patients operated on by him over three years ago and in which the radical block dissection was not made, nine are living, while of the twelve in whom this method was practiced, also nine are still living, thus showing that the radical block method is four times as life saving as the less radical one. His general conclusions are "that, since the head and neck present an exposed field, cancer here, unlike that of the stomach, the intestines, or even the breast, may be recognized at its very beginning; that every case is at some time curable by complete excision; that the field of regional metastasis is exceptionally accessible; that cancer rarely penetrates the extraordinary lymphatic collar of the neck; that the growth tends here to remain localized; that by applying the same comprehensive block dissection as in the radical cure of breast cancer and by freely utilizing the modern researches of surgery the final outcome in cases of cancer of the neck and head should yield better results than that of almost any other portion of the body."

Trypsin for the Cure of Cancer. With Report of the Microscopic Examination of a Breast Thus Treated. W. J. MORTON, New York. *Medical Record*, December 8, 1906.

Morton has treated 30 patients by means of the injection of trypsin and amylopsin and although he does not commit himself entirely, he believes he has seen sufficiently favorable results to enable him to say that the method deserves trial. In one case, a tumor of the breast, a decidedly marked change was noted; a large tumor atrophied and developed into a large scar. The breast was subsequently removed and microscopically the tumor consisted largely of scar tissue with a few diffuse remains of carcinomatous structure. A few cases of face epithelioma are up to the present date cured. In all cases, amelioration of subjective symptoms resulted even if the patients did not recover. Morton considers that in some instances the disease was "brought to a halt." In almost every case, a marked reaction after the injection was noted, both locally and generally. He regards such a reaction as a beneficent sign, showing that the trypsin has taken an effect.

[From a careful study of the case reports, we do not see that the author has much justification in such of his conclusions as indicate favorable results. In the first place, with the exception of one case, no microscopical examinations were made to corroborate the clinical diagnosis. In this case, it is true, local improvement ensued after the injections, but the patient had undergone previous x-ray treatment for a long period; besides, the breast was ultimately removed by operation, and what subsequently might have happened it is impossible to say. In the second place, it is a matter of common observation that there is sometimes marked temporary retrogression of local signs after many of the numerous methods that have been suggested in the treatment of cancer, and in most cases also temporary subjective improvement. In the third place, the period of observation has been altogether too short.]

Splenectomy and Banti's Disease. G. E. ARMSTRONG, Montreal. *British Medical Journal*, November 10, 1906.

Armstrong arrives at the conclusion that the only method of preventing a patient afflicted with this disease from inevitably succumbing, is to perform splenectomy. This conclusion he derived from the study of 32 cases in the literature and his experience in one case. His patient was a man aged 26, who had all the classical signs of the second stage of the disease, and had probably suffered for the past eight years. After the splenectomy the condition had markedly improved. The operative mortality of the reported 32 cases was 28%.

The Prevention of Epididymitis. W. L. BELFIELD, Chicago. *New York Medical Journal*, November 24, 1906.

The prevention of an attack of acute epididymitis is of importance because of the danger of subsequent sterility. This the author claims to have been able to attain by the injection of silver solution into the lumen of the vas deferens. The operation is briefly performed as follows: Through a half inch incision into the scrotum, under local anesthesia the vas is isolated and the canal is opened either by a longitudinal or transverse incision. A curved, blunted needle is passed into the lumen and a small quantity of solution is injected toward the seminal vesicle. A fine silkworm-gut suture is passed into the lumen at each extremity of the incision and out through the wall of the canal a quarter of an inch distant. The two ends are tied loosely outside. The suture entering the proximal end serves to guide the needle when daily injections are made. When restoration of the canal is desired the silkworm-gut suture is lightened so as to appose the cut ends; when the wound is healed the suture is removed. The author has demonstrated clinically and experimentally that his operation does not occlude the vas. It is necessary to state that the cases operated upon presented early symptoms of involvement of the epididymis, such as pain and tenderness in the inguinal canal. Four patients were operated upon and the epididymitis was "absorbed" in every case. The operation does not necessitate confinement in bed.

The Treatment of Cystitis with Alcohol (*Die Behandlung der Cystitis mit Alkohol*). J. SELLEI, Budapest. *Berliner Klinische Wochenschrift*, No. 45, 1906.

Alcohol has proved of use in gynecological cases; it also proves of value in cystitis with ammoniacal changes in the urine. A 5-10-15 per cent. solution prepared with lukewarm or hot water is used for the bladder irrigation. At first the fluid is allowed to return at once, but after several treatments the alcohol may be left in the bladder for 10-15 minutes. This treatment has been of most use in prostatic hypertrophy with cystitis. It can also be employed in gonorrheal cystitis if no pyelitis is present. The reaction is no stronger than that following silver nitrate irrigations. The effect is partly due to the bactericidal action of alcohol, partly to the strong astringent action which mechanically loosens the mucus and the bacteria.

Injuries to the Child's Head During Labor. B. SACHS, New York. *Journal of the American Medical Association*, November 10, 1906.

In his studies of infantile cerebral paralysis, Sachs' attention was directed to the fact that a very considerable number of the infants were either first-born children or had been born after prolonged, often dry, labor, which careful statistics of several hundred such cases showed is more harmful than well-managed instrumental delivery. In first-born children and in protracted labor there is apt to be serious compression of the skull and brain and

consequent hemorrhages from the minute vessels, especially of the pia, with resulting effusion of blood over more or less of the surface of the hemispheres. He is firmly convinced that protracted labor is the most powerful factor in the production of infantile paralysis, imbecility, and particularly epilepsy in these cases. He therefore warns obstetricians that, other things being equal, and, above all, the life of the mother not being in danger, it is wise to curtail the length of labor as much as possible and not to wait till the action of the child's heart becomes feeble. By doing so he thinks many children will escape epilepsy, idiocy and paralysis. Medical men have heretofore not sufficiently considered the child's future welfare in their management of confinements.

Senile Colpitis (*Ueber Colpitis Senilis*). R. PILSKY, Altona. *Medizinische Klinik,* No. 42, 1906.

Senile colpitis is not entirely confined to old individuals; it occurs also in earlier years in obese patients, who have an undeveloped state of the genitalia. The two main symptoms are pain (vague discomfort to severe burning or boring pains in the vagina, often greatly increased after urination), and leucorrhea (pussy green to yellow or slightly blood-stained discharge, often of foul odor, rarely crusts with excoriations). The vagina is usually pale and atrophic, but small, deeply red erosions with granular surface are scattered about and bleed at the slightest touch. Sometimes these denuded areas become confluent, exposing larger surfaces and leading to extensive adhesions or complete obliteration. The bladder symptoms may be very marked and cause one to overlook the true etiological factor.

Powerful caustic applications are contraindicated. Of greatest use is the treatment with strong acetic acid through a Ferguson glass speculum, for two to three minutes, the speculum being gradually withdrawn so that every part of the mucosa is treated. Besides this, daily douches with one-half to one ounce of acetic acid to a douche of cold water should be prescribed. Several instructive cases are detailed in the article.

Fibroid Tumors of the Uterus. C. P. NOBLE, Philadelphia. *Journal of the American Medical Association,* December 8, 15, 22, 1906.

Noble demonstrates the dangers of neglect of uterine fibroids by an analytic study of nearly five thousand cases reported by various authorities, including 337 personal observations. He finds that while the usual ratio of cancer of the cervix to that of the body of the uterus may be approximately estimated as about 10 to 1, with fibroids the cancers of the cervix are less frequent than those of the corpus uteri. This would indicate that the presence of fibroids has a predisposing influence. Other fatal complications mentioned, shown to be frequent in connection with fibroids, are sarcoma, thrombosis, embolism and phlebitis, and fibro-cysts of the uterus; and among the minor complications causing invalidism Noble mentions anemia, pressure effects and cardiovascular changes. He finds little support in the statistics for the notion that the menopause has a beneficial action on the disturbances due to fibroids and there is not much more evidence of the spontaneous disappearance of fibroids in a small percentage of cases after pregnancy than there is of their disappearance at the menopause. In either case it must be the rare exception. The effects of fibroids in causing sterility and as complications of pregnancy and labor are also noticed as well as the complicating conditions outside of the tumor and uterus, which he finds have an important bearing on the question of operation. A considerable proportion of cases would require operation, according to the figure he gives, even if there were no fibroids present. He finds that it is rare to find cases of fibroids without symptoms, and while he still advises expectant treatment in such cases, it is with considerable doubt as to its justification. In considering the mortality of operation for fibroids and the comparative risks of allowing them to go unoperated we have, he says, prospective mortality of from 15 to 20 per cent. from degenerations and complications in the tumor and uterus, together with the secondary effects of these tumors on the economy. In addition, a prospective mortality of 11 per cent. from complications present outside the tumor and uterus, or a total mortality of 30 per cent. to compare with the operative mortality of 3.26 per cent. Hence he believes it wise to remove fibroids when they are discovered and not to take the chances of death and invalidism that their presence entails. Early operation is not only safer and saves from years of invalidism and semi-invalidism, but it would probably eliminate almost entirely the danger from embolism which is a relatively frequent cause of death in delayed operation. The value of accurate records in the study of these growths is pointed out by Noble, and he suggests the following questions: 1. Shall the gravity of fibroid tumors be estimated from the natural history of the disease, from the degenerations in the tumor and the complications arising in the uterus, with the secondary effects on the general economy caused by these growths; together with the complications outside of the tumor and uterus which exist in women having fibroid tumors; or, shall the gravity of the fibroid tumor be estimated by the symptoms in the particular case when the woman comes under observation? 2. What are the relative risks of fibroid tumors and the operation for their removal? 3. Shall small fibroid tumors which are growing but slowly, or not at all, which are producing few or no symptoms, be removed? 4. Shall all other fibroid tumors be removed unless in the particular case there is some sufficient contraindication?

The Radical Operation in Uterine Cancer. A. v. ROSTHORN, Heidelberg. *Journal of the American Medical Association,* December 8, 1906.

Rosthorn sees hope in the researches as to the nature of cancer and recognizes future therapeutic possibilities, but admits that our present resource is in surgery, and since cancer is, in its beginnings, a local disease, the importance of early operation is self-evident. We cannot assure ourselves of the absolute restriction of the disorder, even when first recognized, hence the need of thoroughness in operation and the advantages of the abdominal method in securing this. There are certain limitations even to this operation, and the author goes at length into the discussion of the method by which the cancer extends itself by way of the lymphatics. In the future, he thinks, we must direct our efforts to the selection of cases that give promise of favorable results, for surgery will be of no avail when the disease has extended beyond certain limits. The system should be thoroughly built up before operating. The narcosis should be shortened as much as possible. The danger of infection during operation must be carefully guarded against. Cases of cancer must be examined more carefully as regards their morphologic characteristics and their clinical types, and we should investigate further the conditions and phenomena of recurrence. He concludes with the following suggestions: "1. The abdominal operation is the most rational for the treatment of carcinoma of the cervix, since by its employment the most extensive removal of the parametric tissue is made possible. 2. The view that glands are involved only in later stages of the disease must be dismissed, and the fact that we sometimes find participation of the glands in the very early stages of uterine cancer has convinced me of the necessity of removing the glands in all cases, as I have always done. 3. Based on my own experience, I urgently advise it as our duty to operate in cases of recurrence which have not advanced too far for such procedures. On this account alone it is important to re-examine at frequent intervals (every eight weeks) after the primary operation."

The Utilization of the Broad Ligaments in Complete Descent of the Uterus, Hysteromyomectomy and Removal of the Uterine Appendages. E. C. DUDLEY, Chicago. *Journal of the American Medical Association,* November 17, 1906.

In an elaborately illustrated article, Dudley described the mechanism of descent of the uterus, pointing out the importance of restoring the normal axes of the uterus and vagina and the preservation of the pelvic floor. In complete prolapse of the uterus the condition is practically a hernia, and should be treated like other hernias by reducing it and excising the sac in such a way as to expose strong fascial edges, which should be firmly united by

sutures. He therefore proposes the adaptation of his operation, described in 1902, of end-to-end approximation of the broad ligaments for holding up the pelvic floor after vaginal hysterectomy, to support the replaced uterus. The operation is described in connection with semi-diagrammatic illustrations, and its advantages, when employed in hysterectomy, are enumerated. He proposes its utilization to hold the uterus in place, in hopes that it will be found more effective than the superficial operations which, at best, have been unsatisfactory. At least it will be less mutilating than the alternative operation, vaginal hysterectomy. He also refers to his operation of reefing the broad ligaments in the removal of the appendages, also proposed in 1902, and mentions its advantages.

Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Capsule. H. W. LONGYEAR, Detroit. *American Journal of Obstetrics,* November, 1906.

The nephrocolic ligament is the fibrous network which traverses the fatty capsule of the kidney and inserts itself in the posterior wall of the ascending colon on the right side and in the descending colon on the left. On the right side the contractions of the bowel required to force the intestinal contents upward, combined with the dead weight of the full cecum, exert a powerful pull upon the kidney; on the left side the contractions run in the opposite direction, therefore the left kidney is more rarely loosened. When the right kidney is pulled down, the duodenum, which is attached to the fatty renal capsule, is distorted and kinked, hence digestive symptoms arise. The writer shows how to demonstrate the ligament by dissection on the cadaver. Gerota's capsule is formed by a splitting of the subperitoneal aponeurosis which divides to form a fibrous sheath for the fatty capsule, and is composed of a firm fibrous layer.

The technic of the operation consists of a 2½-3 inch incision at the edge of the quadratus lumborum, below the twelfth rib, and running diagonally downward. The layers are divided, except the muscles, the fibers of which are separated until Gerota's capsule is reached, this structure appearing like the peritoneal membrane. Gerota's capsule is incised, its edges freed and isolated; the nephrocolic ligament is isolated by grasping the fat at the lower pole of the kidney and passing a blunt hook beneath it. The loop of ligament thus formed is passed through the incision in Gerota's capsule which is closed by suture and overlapping. The transversalis fascia is now sutured, the loop of ligament being sewed to its upper angle close to the twelfth rib. The rest of the wound is then closed. Twenty-day chromic gut is employed. The patient remains in bed three weeks. The operation has been performed in nine cases since January, 1906, and so far with excellent result in all. There is no mutilation; if suppuration occurs it does not invalidate the results. The bowel as well as the kidney is suspended.

A Case of Extensive Tuberculous Ulceration of the Small Intestines, Which Necessitated the Removal of Five Feet of Ileum. FRANCIS J. SHEPPARD, Montreal. *British Medical Journal,* November 10, 1906.

A man, aged 34, for the past three years had suffered from attacks of "appendicitis" that occurred about every two months. Twenty-four hours before admission to the hospital he was seized with severe pain in the right iliac fassa which radiated to the testicles and into the perineum. There was some pain on micturition and the bowels had not moved for two days. Continuous vomiting, temperature 103° F., pulse 128. On opening the peritoneum, free stinking pus escaped. The appendix was normal, but the small intestine for a considerable distance was found to be the seat of numerous ulcers, one of which had perforated and was discharging liquid feces. Owing to the extensive involvement, it was necessary to resect five feet; Murphy button anastomosis. The patient did well for a week when a spontaneous fecal fistula occurred; a week later an abscess developed due to another perforation of the intestine. This persisted and the patient died from inanition three months later. In the discussion of this case, Ochsner pointed out the fact that it was absolutely necessary to obtain healthy intestine in order to obtain union after anastomosis. W. J. Mayo said that drainage should be avoided in intestinal tuberculosis, on account of the danger of intestinal fistula.

The Treatment of Diffuse Suppurative Peritonitis Following Appendicitis. FRANZ TOREK, New York. *Medical Record,* December 1, 1906.

Torek recommends large incisions, usually medium, extending from two inches above the umbilicus to the pubis and in some cases from the ensiform cartilage to the pubis. The pus is evacuated, the appendix removed and the peritoneal cavity washed with large quantities of salt solution from a pitcher. This is done gently, with as little manipulation as possible, but all pockets of pus must be opened and irrigated. The abdomen is closed by through-and-through silk sutures. The author argues against the use of the Fowler position. Of eighteen cases operated upon, there have been 3 deaths or 16 2-3%, all in cases operated upon after 70 hours.

[The results while very commendable are not better or even as good as some obtained by surgeons using the so-called "Murphy method" of small incisions, removal of the appendix, little or no drainage, the Fowler position and salt solution rectal injections. After all the essential thing in both operations is the avoidance of excessive peritoneal rubbing and manipulation and the minimum use or absence of drainage. The elements in the author's operation that do not appeal to us are the exceedingly long incision and the incomplete suture of the abdominal wall. It would be interesting to note in what percentage of cases ventral hernia ensues.—E. M.]

Operative Treatment of Irreducible Luxation of the Semilunar Cartilages of the Knee Joint. JAMES BELL, Montreal. *British Medical Journal,* November 10, 1906.

In Bell's experience, the usual small incision in the line of the joint (transverse or vertical) has proven unsatisfactory. It affords little space, so that the whole of the cartilage either cannot be removed or only with much difficulty. Such extensive manipulation increases the risk of infection. The author has therefore in his last four cases resorted to the transpatellar incision; the joint is freely opened just as in fracture of the patella. This procedure gives ready access to the joint and the cartilage can be easily removed. The patella is sutured at the completion of the operation. Four cases are reported, all with excellent results.

Cleft Palate. HENRY R. WHARTON, Philadelphia. *Pennsylvania Medical Journal,* November, 1906.

Wharton believes that the best time to operate is between the third and fourth years. He does not approve of obturators, because, although they prevent fluid from passing into the nasal fossa, they do not have any effect upon the acquired defects of speech. He describes the ordinary operations of staphylorrhaphy and uranoplasty. He believes that it is absolutely necessary to remove any adenoids, hypertrophied tonsils or nasal obstructions before operating. He has found that infections are much more likely to ensue if these measures are not taken. For a few days before the operation, the parts are to be kept thoroughly cleansed. The author has had no experience with the Brophy operation.

The Bacteriology of Aseptic Wounds. L. S. DUDGEON, London, and P. W. G. SARGENT, London. *Lancet,* November 17, 1906.

These authors demonstrated in 50 cases in which primary union was obtained, that the wound in a very large majority of cases at the end of the operation and in the course of the healing contained bacteria, usually the staphylococcus albus. Of 5 cases in which antiseptics were used all were sterile. These results show that the term "aseptic" is not strictly correct. The authors believe that the so-called "aseptic fever" is not due to absorption products as has been hitherto regarded, but rather to latent infection by bacteria.